

47
JANUARY 1952

V. 9th
(Jan. 1952)

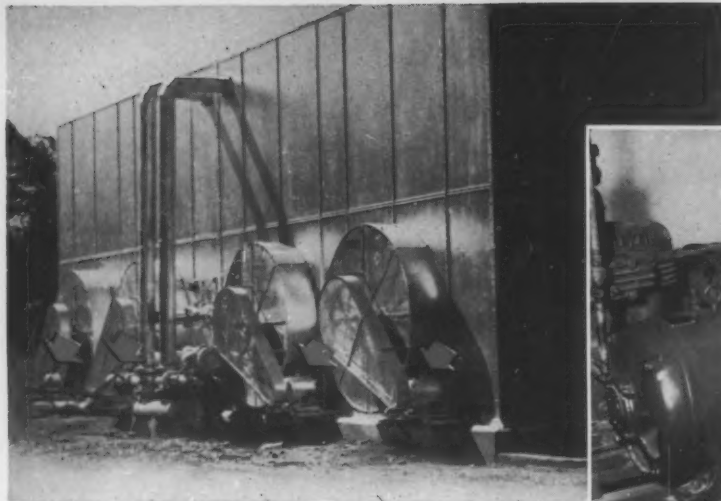
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Commercial Refrigeration

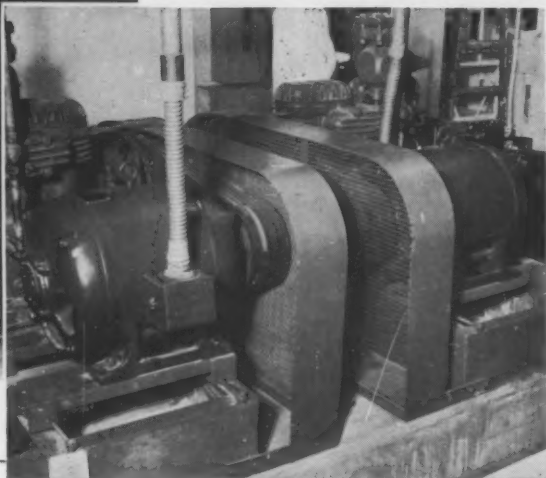
AND AIR CONDITIONING



MERCHANDISING, SELLING, INSTALLATION AND MAINTENANCE OF
COMMERCIAL REFRIGERATION AND AIR CONDITIONING EQUIPMENT



Four Century 5 horsepower splash proof motors driving fans.



Two Century 30 horsepower motors driving refrigeration compressors.

Century

**TYPE SC-
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1/8 to 3/4 horsepower



1 to 1 1/2 horsepower



2 to 15 horsepower



20 to 125 horsepower



150 to 400 horsepower

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With Least Down-Time**

The correct selection of the right combination of motor type, speed, power, torque, frame and mounting keeps Century motors on the job.

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Skillful application makes sure that Century motors meet the exacting requirements of the machines they drive. That's your assurance of dependability.

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for all your electric power requirements

CE-590R

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and AIR CONDITIONING • JANUARY, 1951

IT'S NOT JUST NEW....

HERE ARE THE FEATURES THAT MAKE IT GREAT

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If pressure rises beyond normal, valve throttles automatically, limiting suction pressure to predetermined setting and thus protecting motor from overload.

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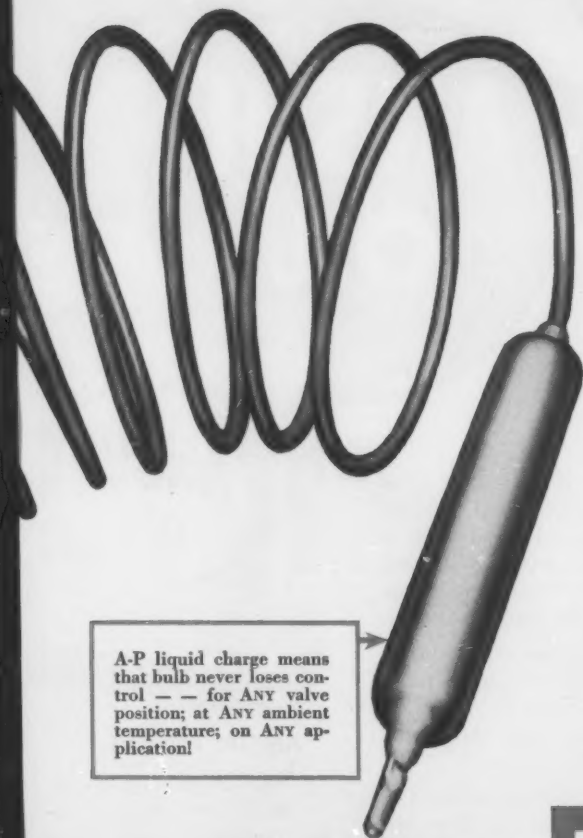
Clearly marked adjusting knob provides quick and easy pressure-limit adjustment, to "custom-build" valve for any requirement. Moisture-proof cap covers adjusting knob.



Model 209 Expansion Valve. 0 to 1-ton Freon 12. Pressure-limit range 0 to 55 lbs. Available for Methyl and Freon 22.

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it's Revolutionary!



A-P liquid charge means that bulb never loses control — for ANY valve position; at ANY ambient temperature; on ANY application!

A-P CONTROLS CORPORATION

(formerly Automatic Products Company)

2486 N. 32nd Street • Milwaukee 45, Wis.
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DEPENDABLE Controls

Stocked and Sold By Good Refrigeration Wholesalers Everywhere
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EXPANSION VALVE
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USE FOR ORIGINAL EQUIPMENT

It's here at last — the ALL-PURPOSE valve you have long wanted! Adjust it instantly for ANY pressure limit—for ANY normal superheat. Install it in ANY position—in ANY ambient temperature—and on ANY application. A-P's great new Model 209 Expansion Valve will meet every requirement!

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Please send me Bulletin R-1 on the revolutionary A-P Model 209 All-Purpose Expansion Valve.

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Drier THAN THE SAHARA

ANSUL Refrigerants

ANSUL OIL



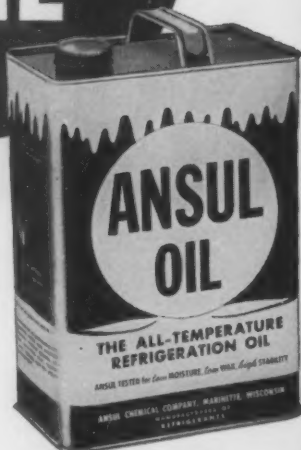
Reg. U. S. Pat. Off.



DRYNESS is a critical requirement in the specifications of ANSUL Refrigerants and ANSUL Refrigeration Oils. To safeguard the dryness of Ansul Refrigeration Products, specially designed container-drying and product-dehydrating equipment is used to eliminate the last trace of moisture.

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ANSUL Technicians have prepared a series of bulletins on the effects of moisture and other foreign matter in refrigeration systems. Copies may be obtained from ANSUL wholesalers or by writing directly to Ansul Research.



ANSUL 150 OIL —

The All-Temperature Refrigeration Oil — is sold by leading refrigeration wholesalers everywhere. (If you require a higher viscosity oil ask for ANSUL 300.)

ANSUL CHEMICAL COMPANY

REFRIGERATION DIVISION, MARINETTE, WISCONSIN

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JANUARY, 1951 • COMMERCIAL REFRIGERATION

JANUARY, 1951

VOLUME 8, NO. 1

Commercial Refrigeration

AND AIR CONDITIONING

Established 1944 as
THE REFRIGERATION INDUSTRY

THIS MAGAZINE has no
official affiliation with ANY
group, society or association.

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Tukey 6708

THE COVER . . . Inconspicuous supply grilles like those shown here are the only visible evidence of the year-around air conditioning system in this women's specialty shop. The living plants, as well as the patrons, seem to thrive on the conditioned air. If you're interested in how this system saved its owner \$14,000, turn to page 36.

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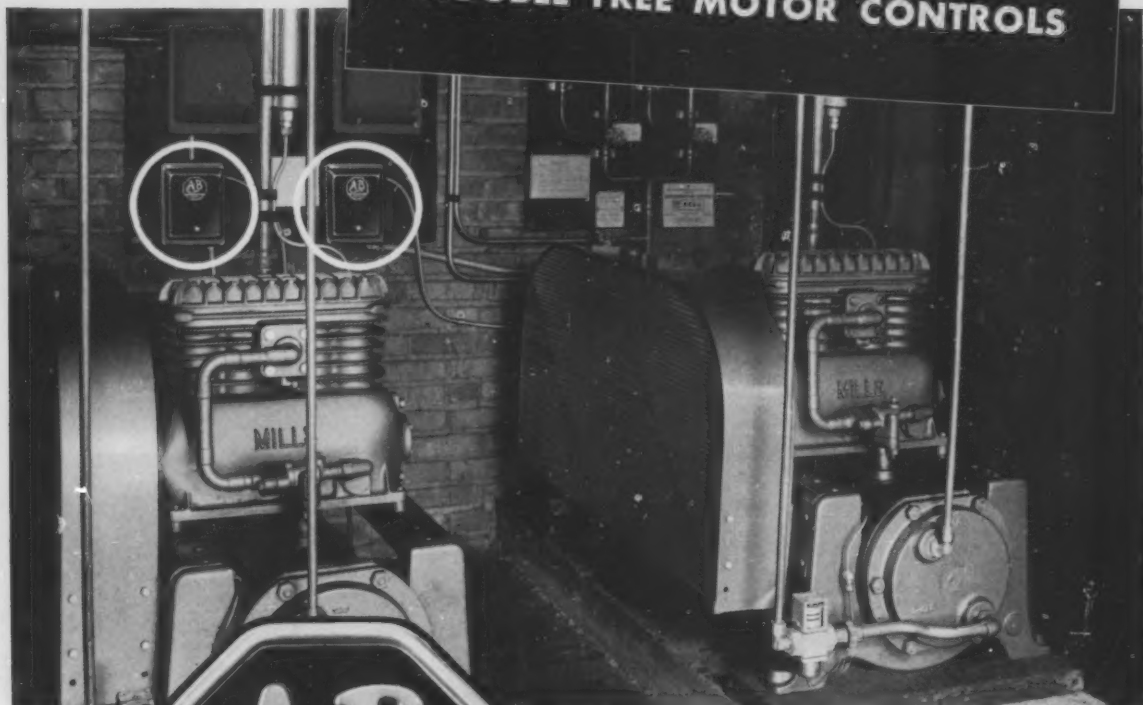
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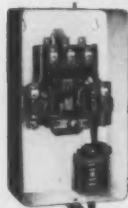
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Two to five hp Mills Refrigeration Units equipped with Allen-Bradley Bulletin 709 Solenoid Starters.

MILLS REFRIGERATION UNITS equipped with ALLEN-BRADLEY TROUBLE FREE MOTOR CONTROLS



A-B SPECIAL REFRIGERATION CONTROL UNIT



Allen-Bradley has a broad line of air-conditioning and refrigeration controls; pressure and temperature controls; manual, automatic and combination starters; and special refrigeration panels. This special unit consists of a high pressure cutout and starter in one enclosure.

Why are Allen-Bradley starters so popular for refrigeration and air-conditioning service? . . . because they are trouble free. Only ONE moving part. No pivots, pins, or bearings to corrode or stick . . . no jumpers to break. You install them . . . and forget them!

No contact maintenance . . . Allen-Bradley patented silver alloy contacts never need cleaning, filing, or dressing.

Dependable overload relays . . . Allen-Bradley thermal relays are accurate and always dependable . . . even after long service.

The Allen-Bradley trademark stands for millions of trouble free operations.

Allen-Bradley Co.
1340 S. Second Street, Milwaukee 4, Wisconsin

ALLEN-BRADLEY SOLENOID MOTOR CONTROLS

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JANUARY, 1951 • COMMERCIAL REFRIGERATION



NO "SECOND BESTS" FOR THE SKI-CHAMP!

Imagine a champion skier putting up with anything less than the finest in skis! He knows that a broken ski can mean a broken leg instead of a broken record.

It is equally hard to imagine a real mechanic putting up with less than the finest in tools. He knows that an inferior tool is an open bid for an injured hand or a spoiled job. No wonder you find Bonney Wrenches in the kits of so many top-notch mechanics.

This is one of a series of spirited sporting scenes (in full color, without advertising) available on request. Write for your free set today.

"CHEAP TOOLS ARE FOR CHUMPS", say the men who know

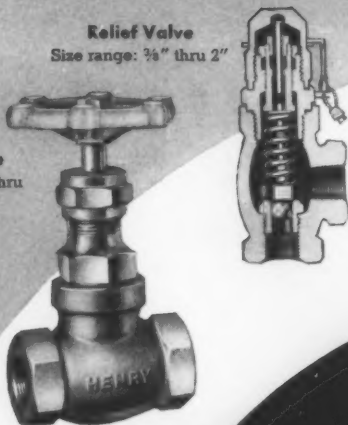
best—America's finest mechanics. And they are strong for Bonney Wrenches. To them "Bonney" means

lightness, strength, balance, precision . . . a good job in less time . . . with greater safety for man and materials.

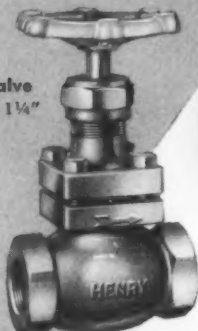


BONNEY FORGE & TOOL WORKS, ALLENTOWN, PENNSYLVANIA

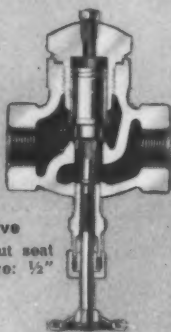
Relief Valve
Size range: $\frac{3}{8}$ " thru 2"



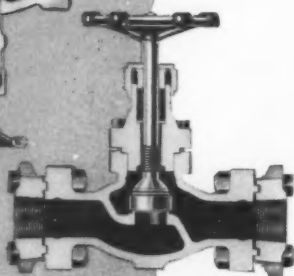
Screwed Bonnet Shut-Off Valve
Size range: Globe and Angle, $\frac{1}{4}$ " thru 1"; Tees, $\frac{3}{8}$ " thru 1"



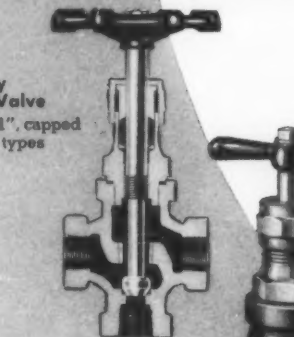
Bolted Bonnet Shut-Off Valve
Size range: Globe and Angle, $\frac{1}{4}$ " thru 2"



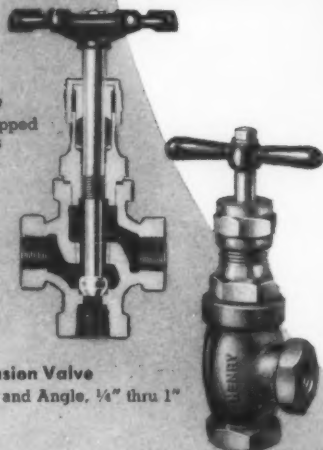
Check Valve
With or without seat lift. Size range: $\frac{1}{2}$ " thru 2"



Flanged Shut-Off Valve
Size range: Globe, $\frac{1}{4}$ " thru 4"



Three Way Dual Shut-Off Valve
Size range: $\frac{1}{2}$ " thru 1", capped and handwheel types



Expansion Valve
Size range: Globe and Angle, $\frac{1}{4}$ " thru 1"

Liquid Level Gauge
Forged Steel
Size range: $\frac{3}{8}$ " and $\frac{1}{2}$ "



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FIELD PROVEN FEATURES
HAVE MADE
**HENRY
AMMONIA
VALVES**
THE MOST POPULAR LINE
IN THE
REFRIGERATION INDUSTRY
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Write for
Catalog 100

VALVES • DRIERS • STRAINERS • CONTROL DEVICES and ACCESSORIES FOR REFRIGERATION and AIR CONDITIONING and INDUSTRIAL APPLICATIONS

HENRY VALVE COMPANY

MELROSE PARK, ILLINOIS (Chicago Suburb)

Cable: HEVALCO, MELROSE PARK, ILLINOIS

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SINCE 1906

REFRIGERATION helps you serve better

There are just two steps to closing more business

THE FIRST STEP IS—*use this coupon*

Just fill it in and mail it

We will know this is your request for a Brunner factory representative to stop in and go over the reasons why Brunner dealers find it easier to close business.

Name

Company

Address

City and State

With all the facts fresh in mind you will recognize the second step—recommend and install Brunner's from now on. With 69 models comprising a complete range of commercial capacities and types, a

dependable source of supply and a known product with ready acceptance by your customers, selling obstacles are removed and you are on the way to bigger business. We will be looking for the coupon.

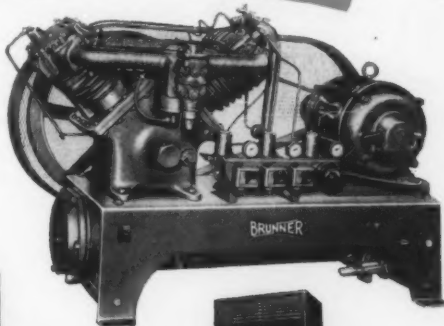
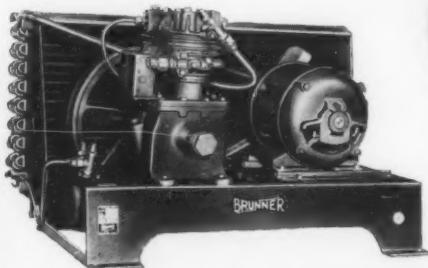
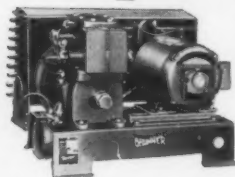
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Utica 1, New York, U. S. A.

REFRIGERATION CONDENSING UNITS

...a size and type
for every purpose

AIR AND WATER
COOLED MODELS
1/4 HP. to 75 HP.



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SINCE 1906

AIR CONDITIONING

Self Contained Units in 4 sizes: 3-5-7½ and 10 HP.
Remote Installation Types from 3 to 75 HP.

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and AIR CONDITIONING • JANUARY, 1951

Wagner
ELECTRIC MOTORS
... the choice of leaders
in industry

it pays to be particular
about your choice of motors

Choose Wagner Motors for...

longer life . . . greater dependability
and service when and where it's needed!



The selection of the *right* motor to power your product is all important. Uniform troublefree performance, dependable long-life operation, the reputation of the manufacturer, and his ability to provide immediate repair parts and service — *when* and *where* they're needed, are all factors that mean satisfied customers for you. You'll save time, money, and worry if you choose from the Wagner line because:

1. Wagner Motors are backed by a liberal warranty.
2. They are available in a wide range of types and sizes for every application.
3. Improved engineering features assure long life and efficient operation.
4. They are available from Wagner Branches in all principal cities.
5. More than 650 Wagner Authorized Service Stations and Parts Distributors plus 25 Wagner-owned Service Branches provide on-the-spot service, replacement motors, or genuine repair parts.

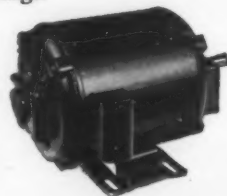
Regardless of what your motor requirements may be, Wagner can furnish the *right* motor to fit your need. Bulletin MU-185 gives complete information—write for your copy.

Wagner Capacitor-Start Motors

Wagner type RK motors are your best choice for use where capacitor-start fractional horsepower motors are desired. They are designed for use in applications where starting loads are fairly heavy, but which can be brought up to operating speed quickly.

They are available with either sleeve or ball bearings; in open or totally-enclosed types, with rigid or resilient bases or with a machined end plate for flange mounting. They are built in $\frac{1}{8}$, $\frac{1}{6}$, $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ horsepower ratings.

If you need motors in larger sizes, you can't beat the famous Wagner single-phase repulsion-start induction motor for low upkeep cost, freedom from vibration and noise, and years of reliable service. It's the standard by which all other single-phase motors are judged.



Wagner
Electric Corporation
1891 **WE** 1951

WAGNER ELECTRIC CORPORATION
6442 Plymouth Ave., St. Louis 14, Mo., U.S.A.

ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES
AUTOMOTIVE BRAKE SYSTEMS — AIR AND HYDRAULIC

BRANCHES IN 31 PRINCIPAL CITIES

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your wholesaler can
do the whole job
with **SUPERIOR**



You'll find that your next refrigeration or air conditioning job will run smoother and last longer if you let your wholesaler supply you with a complete line of Superior valves and accessories.

Many others have found that Superior-engineered products save them time and money in installation and repair costs when they are used as initial equipment on the job. Globe valves, Line valves, Economizers, Driers, Sight Glasses and a host of quality Superior products are made in a number of types and sizes assuring good performance in any size refrigeration system. Remember always to specify Superior for all your new equipment and replacement parts—and let your local wholesaler do the entire supply job.

Superior *valve and fittings co.*



Pittsburgh 26, Pa.

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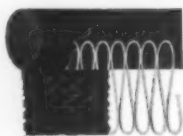
and AIR CONDITIONING • JANUARY, 1951



Maintenance of a constant optimum temperature is vital for the safe transport of highly perishable bananas and other tropical fruits. That's why Inner-seal weatherstripping was specified in the special plans drawn for a new class of all-refrigerated ships by the United Fruit Company. On the hatch plugs of the new SS Metapan, shown below, Inner-seal, with its resilient sponge rubber bead, provides an airtight, crevice-filling seal against torrid, equatorial heat. Refrigeration equipment doesn't have to work overtime to compensate for costly leaks that dissipate the cool air circulated through cargo spaces. In addition, the Inner-seal used on these ships has a neoprene coating that resists the ravages of sunlight, extreme temperature variations and salt water, thus assuring longer, more effective service under the toughest marine conditions.

Perhaps your problem isn't keeping bananas cool and calm, but if it involves keeping heat or cold, dirt or dampness in or out, you ought to have the facts on Inner-seal. Write today for data sheet giving complete information.

The SS Metapan, one of nine new all-refrigerated ships added to the Great White Fleet. In addition to cargo she can carry 12 passengers in first-class accommodations.



★ Tough spring steel wire moulded for life in live sponge rubber, providing unequalled flexibility for fitting sharp corners and compound curves.

Bridgeport
FABRICS, INC.

BRIDGEPORT 1, CONN.
Est. 1837

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LETTERS

Editorial Material Termed Excellent for Dealers

EDITOR:

We are very much impressed with your article, "Pick Your Own Profit", on page 32 of your November issue. This is some of the most excellent informative material for commercial refrigeration dealers that we have seen. You are certainly to be commended on including this type of information in your publication.

We should like very much to be sure that all of our dealers have been given the opportunity of reading the article and we should like to know your charge for 250 reprints.

Your prompt reply will be sincerely appreciated.—E. N. Barton, Sales Department, The Warren Co., Inc., Atlanta 1, Ga.

Reprints of any editorial material published in COMMERCIAL REFRIGERATION can be supplied at a nominal charge.

We Can Supply Data On Contract Service

EDITOR:

We are considering a contract policy for our service department, and have read, with considerable interest, your article in the April issue on this subject.

There are many different angles to this contract service, and we are wondering if you have any further information along these lines that might be helpful in establishing service, and which might enable us to answer some of the pros and cons in reference to such a service. The more information we have along these lines the more helpful this project will be in order to help us decide on the issue.—Frank Fava, Syracuse, N. Y.

We are certainly glad to learn that you derived such value from the article in our April 1950 issue entitled "Contract Service — Door-Opener for Sales".

Further information on this same subject was published in our issues of January and July, 1947. Copies of these two issues are still available.

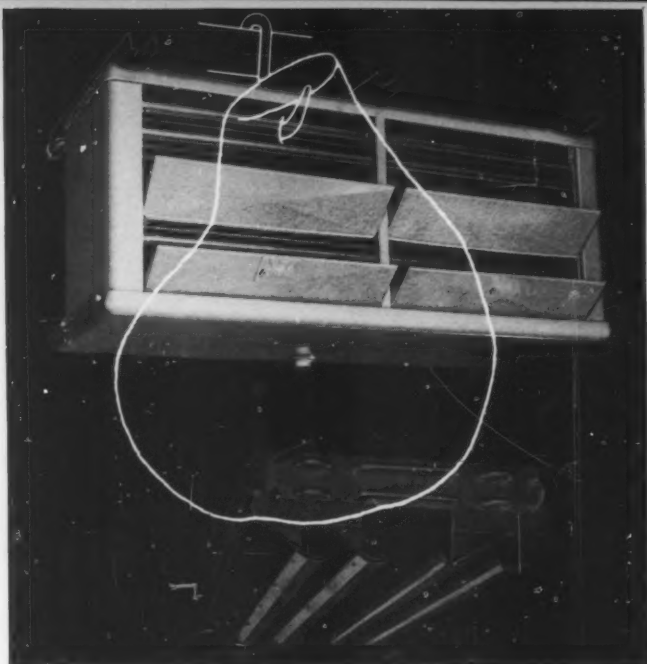
Australian Orchids for American Manufacturers

EDITOR:

Thank you for the great service you have been to me in providing information on beer cooling, and also for forwarding my name along to the manufacturers of beer cooling equipment in your country. Their

SHOULDERS GET COLD

...more economically with



Finned Tubing by BUSH



Bush Finned Tubing is available in a wide range of sizes and fin spacings to meet every cooling need.

Walk-in boxes have come a long way from the cast iron brine pipes that were difficult to install, hard to clean and almost impossible to defrost.

Modern, efficient Bush Finned Tubing in economical unit coolers or natural convection coils will give you a cold shoulder (or anything else you care to name) quicker, better and more economically than any other refrigerating equipment you can buy.

Buy the Best—and the Best is



HEAT TRANSFER PRODUCTS

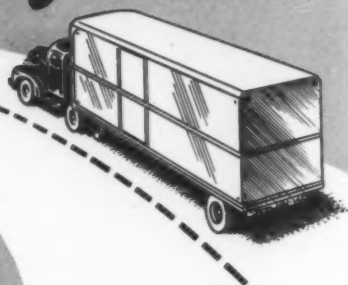
BUSH

Bush Manufacturing Co.

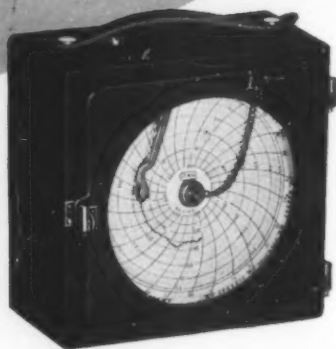
WEST HARTFORD • CONNECTICUT

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and AIR CONDITIONING • JANUARY, 1951

For the Long Haul...



TAGLIABUE Miniature Temperature Recorder



Hour after hour, day after day, TAGliabue Miniature Temperature Recorders ride refrigerated trucks...freight cars...airplanes—charting temperatures every mile of the way. Completely independent of any external power supply, needing no shock-absorbing mounting, this tough little instrument draws an accurate, reliable record that's unaffected by vibration, jolts or lurches.

This handy TAG Recorder measures scarcely six inches square, weighs under four pounds. It runs as long as seven days without attention, and records temperatures as low as -30 and as high as $+220^{\circ}\text{F}$. Companion models record pressure, vacuum, and off-on operation of related equipment. Write for full details today!

Valuable standing still, too!



Retailers of frozen foods like the way the Miniature Recorder chart proves to customers that their food has stayed frozen.



Institutions—hotels, hospitals, schools—find the Miniature Recorder valuable in checking air, refrigerator, or freezer temperatures.



Service Engineers responsible for heating, air conditioning, refrigerating installations use the Miniature Recorder to collect day-by-day data.

TAGLIABUE INSTRUMENTS DIVISION

Weston Electrical Instrument Corporation
617 Frelinghuysen Avenue, Newark 5, New Jersey



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LETTERS

response was very gratifying, and the information provided of valuable assistance to me in preparing my paper.

I cannot speak too highly of the assistance and ready response I have received from U. S. manufacturers. The enthusiastic desire to provide all types of data and information on refrigeration engineering gratis is in itself a tribute to your countrymen, and also concrete proof that they believe in such mis-spent words as "free enterprise" and "untrammelled competition".

Wishing you and your journal a continuance of your present success.—*Peter Fahey, Sales Engineer, Rava (Sydney) Pty. Ltd., N. S. W., Australia.*

Wants Counter-Height Florist Display Case

EDITOR:

Who, if anyone, manufactures a florist display case that would fit or be close to the following description?

What we have in mind is a flat top glass display case—glass top, and sides, and which would have a storage space underneath which would be accessible either from the rear or the front of this case. Case height would be somewhere around 42 inches. Width sufficient for a good display of made-up floral pieces.

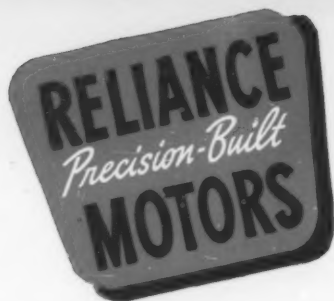
Any help you could render in locating a manufacturer of this type equipment would be most appreciated.—*Carl V. Besore, Waynesboro, Pa.*

We do not know of any manufacturer who makes a unit of the specific size to which you refer in your letter, but we are listing some of the companies which make florist refrigerators, and which may possibly be in a position to fill your requirements. We suggest that you write to them and outline the size unit you want.

Character Refrigerator Co., Queens, L. I., N. Y.; Coldin Cabinet Co., Inc., Wilkes-Barre, Pa.; Fogel Refrigerator Co., Philadelphia, Pa.; Gem Refrigerator Co., Philadelphia, Pa.; General Refrigerators Corp., New York, N. Y.; Howard Refrigerator Co., Philadelphia, Pa.; Jordan Refrigerator Co., Philadelphia, Pa.; Selb Manufacturing Co., St. Louis, Mo.


Join
MARCH of DIMES

JANUARY 15-31



In making a better motor...

*IT'S THE LITTLE THINGS
THAT COUNT, too!*



RELIANCE
Precision-Built
MOTOR
INDUCTION

HP.	FRAME	FORM	PHASE	MODEL NO.
NEMA DESIGN		SERIAL NO.		
CYCLES	R.P.M.	VOLTS	AMPERES	DUTY

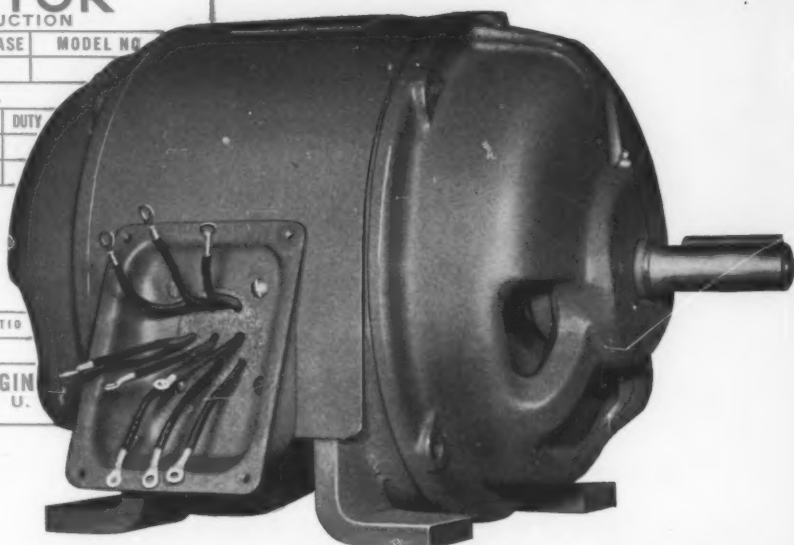
CONNECTIONS

4	5	6	4	5	6
7	8	9	7	8	9
1	2	3	1	2	3

LOWER — LINE — HIGHER
VOLTS VOLTS

REFER TO BUL. 3042 FOR LUBRICATIO

RELIANCE ELECTRIC & ENGINEERING CO.
CLEVELAND, OHIO, U.S.A.



Quick, easy, mistake-proof connections!

Reliance PRECISION-BUILT motors *are* made better—down to the finest detail. For example, the leads of all nine-lead, 220/440 volt motors are clearly identified in a standard connection diagram which appears on the motor name plate. With this simple indexing, the job of connecting a motor becomes quick, easy and mistake-proof.

It will pay you to have the complete facts on Reliance PRECISION-BUILT Motors—especially the details which combine to make them today's outstanding choice for dependability and long life. Write today for Bulletin B-2101, or ask a Reliance representative to show you the many other precision features which make these motors truly superior.

Sales Representatives in Principal Cities

RELIANCE ELECTRIC AND ENGINEERING CO.

"Motor-Drive is More Than Power" • 1113 Ivanhoe Road, Cleveland 10, Ohio

Circle No. 14 on Reader Service Card for more information
and AIR CONDITIONING • JANUARY, 1951

KOLD-HOLD SYMBOL OF SUPERIOR REFRIGERATION



let **KOLD-HOLD** show you
**why "serpentine" design cuts
 your refrigeration costs**

Take a good look at the cross section of a Serpentine Plate in my right hand for it holds the key to refrigeration savings for you. Notice that the channels through which the refrigerant flows are formed by joining a flat metal sheet to an embossed metal sheet. There is no internal tubing or piping so the refrigerant is in direct contact with the surface to provide the equivalent of 100% prime surface. The size of the refrigerant passage and the smooth contour of the return bend reduce pressure drop to the absolute minimum.

Plates can't possibly become clogged or oil logged. So you see, the Serpentine design gives you more efficient refrigeration with less trouble and for less money.

And the flat top surface of the Serpentine Plate is really handy. It adapts itself readily to the construction of shelves, stands and banks to add extra convenience to your holding and freezing rooms.

Why pay more for refrigeration when you get more efficient refrigeration by using Kold-Hold Plates with Serpentine design. Send for full details today.

KOLD-HOLD

protects every step of the way

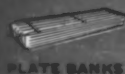


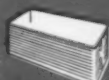
PLATE BANKS



PLATE STANDS



PREFABRICATED LINERS



SERPENTINE EVAPORATORS



"HOLD-OVER" PLATES

KOLD-HOLD MANUFACTURING COMPANY 503 E. Hazel St., Lansing 4, Michigan

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JANUARY, 1951 • COMMERCIAL REFRIGERATION

30 YEARS OF REFRIGERATION

PIONEERING PRODUCED THE

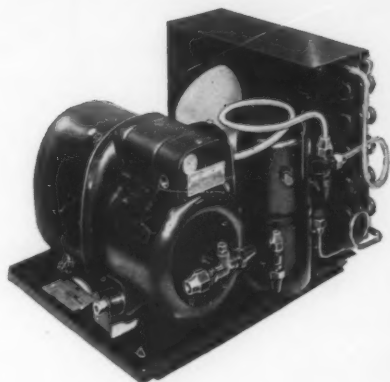
SERVEL SUPERMETIC

SEALED CONDENSING UNIT

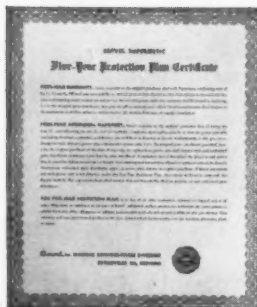
THIRTY years ago Servel produced its first electric refrigeration units—big, slow-operating, splash-lubricated mechanisms that, like most others, required almost as much floor space as the fixture.

Today, Servel's line of Supermetic condensing units offers new streamlined compactness, sealed-in lubrication for all moving parts . . . There's no oil "slugging" . . . performance is efficient and quiet. Furthermore, the Supermetic's sealed construction makes installations easier . . . eliminates extra maintenance expense.

Servel's wide range of models (1/5 to 3 HP) offers an exact size to match any requirement. Lightweight designs save valuable space. So, if you need a unit for a new fixture, or want to replace one that's obsolete, then specify a Supermetic. You'll make a good deal when you buy Servel.



PERFORMANCE MAKES THE 5-YEAR PROTECTION PLAN POSSIBLE



Supermetic's use-tested, field-proved performance has made possible the amazing Servel 5-Year Protection Plan. This plan relieves fixture manufacturers of field replacement problems. When there's a need for replacement parts, customers are assured prompt attention through local service firms who deal with conveniently located Servel authorized wholesale suppliers. The plan covers all fractional sizes. Larger models are warranted a full year. For complete information, mail the coupon today.

**SUPERMETICS
ARE AVAILABLE
EVERYWHERE**

Servel

S U P E R M E T I C

Models for every electric refrigeration

and air-conditioning use . . . 1/5 to 5 H.P.

Circle No. 16 on Reader Service Card for more information
and AIR CONDITIONING • JANUARY, 1951

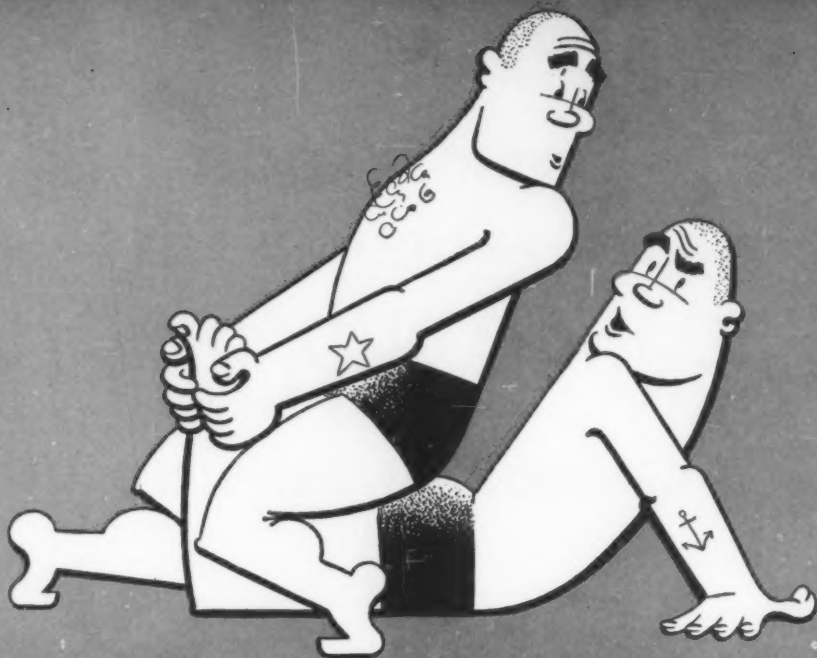
SERVEL, INC.
ELECTRIC REFRIGERATION DIVISION
DEPT. C-1 EVANSVILLE 20, INDIANA

NAME (personal) _____

TITLE _____

COMPANY _____

ADDRESS _____ ZONE _____ STATE _____



IT'S MUCH EASIER BENDING

DRYSEAL

REFRIGERATION TUBE

● There's no need to pull and haul when you work with dead-soft Dryseal. It is bent with the hands with little effort. It is this soft temper and its ductility that make it easy to flare for compression fittings without splitting.

Another very important feature of Dryseal is the double-crimp seal at each end of the tube. This is done in the manufacturing and keeps dirt and

moisture from entering the tube. The seal is made in such a way as not to change the diameter of the tube so that it can pass through any opening large enough for the tube itself.

And, for your greater convenience we have just recently brought out Dryseal in a nifty-50 one-coil carton. This carton, which has been attractively designed for easy identification in stock, contains one 50-foot coil of Dryseal . . . is easier to handle, light weight, economical.



REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

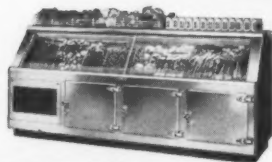
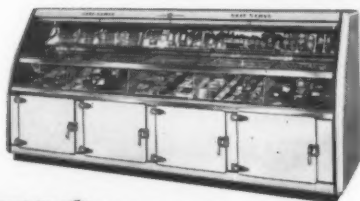
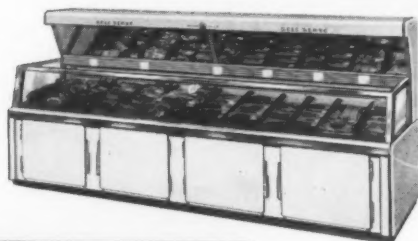
230 Park Avenue, New York 17, New York

Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.;
Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.
Sales Offices in Principal Cities, Distributors Everywhere.

Circle No. 17 on Reader Service Card for more information

you CAN MAKE MONEY

with a SUPER-COLD FRANCHISE!



Here's Why—Your salesmen receive one of the finest sales training programs ever developed to clinch sales of refrigerated display cases... a plan backed by 25 years sales experience. This training gives you more effective sales coverage—with resulting profits.

You offer a complete line of refrigerated display cases when you have a Super-Cold franchise. Whatever the storekeeper's need, there's a modern, properly engineered case to meet his requirement. You don't have to supplement the Super-Cold line.

Competitively priced, too—even with all the fine quality of Super-Cold equipment, it sells in competition to ordinary lines. You are backed by a strong advertising campaign... excellent literature, and sales aids.

Best of all, back of your franchise is experience and integrity... a leader for 25 years in development and design of food store refrigeration. It will pay you to investigate the opportunities of a Super-Cold franchise. Fill in the coupon below today!

THE SUPER-COLD CORPORATION

1020 E. 59TH STREET, LOS ANGELES 54, CALIFORNIA

*GUARDIAN OF
Flavor
Appearance
Purity*

SUPER-COLD
Refrigeration

COMPLETE FOOD STORE REFRIGERATION UNDER ONE GREAT NAME

Circle No. 18 on Reader Service Card for more information
and AIR CONDITIONING • JANUARY, 1951

CR

The Super-Cold Corporation
1020 E. 59th St., Los Angeles 54, Calif.

Gentlemen:

Please send me details on your new
Super-Cold franchise.

Name _____

Address _____

City _____ State _____

What the serviceman should know about VIRGINIA REFRIGERATION products

To Charge a System,
Use Refrigerants
That Are
Consistently Pure,
Consistently Sure...



"EXTRA DRY ESOTOO" (B. P. 14°F.)

"Extra Dry" is the refrigeration grade SO_2 that service and maintenance engineers have endorsed for more than 20 years. Comes in all popular cylinder sizes.

"V-METH-L" (B. P. -10.7°F.)

Virginia Methyl Chloride is made specifically for refrigeration use. Low moisture content, low acidity and narrow boiling range recommend "V-Meth-L" for the most exacting requirements.

"FREON" REFRIGERANTS

"FREON-11"	"FREON-12"
"Boiling Point"	"Boiling Point"
74.7°F.	-21.6°F.
"FREON-22"	"FREON-113"
"Boiling Point"	"Boiling Point"
-41.4°F.	117.6°F.
"FREON-114"	
"Boiling Point"	
38.0°F.	

Virginia Smelting Company is distributor for Kinetic's "Freon" Refrigerants.

HOW TO STOP DRIPPING PIPES

The annoyance of constantly dripping suction lines, circulating cold water pipes, valves and fittings can be stopped—permanently—with Presstite Insulation Tape. It comes in 2"-wide rolls, $\frac{1}{8}$ " thick. Presstite Insulation Tape contains 40 percent virgin cork and will adhere to any surface. Joints are self-sealing. The convenient package contains 30 lineal feet. It's good policy to use Presstite Insulation



Tape on all new and reconditioned installations and stop customer dissatisfaction before it can start.

ASK YOUR WHOLESALE OR WRITE

VIRGINIA SMELTING COMPANY

WEST NORFOLK

PHILADELPHIA • NEW YORK • BOSTON
CHICAGO • DETROIT • ATLANTA



VIRGINIA

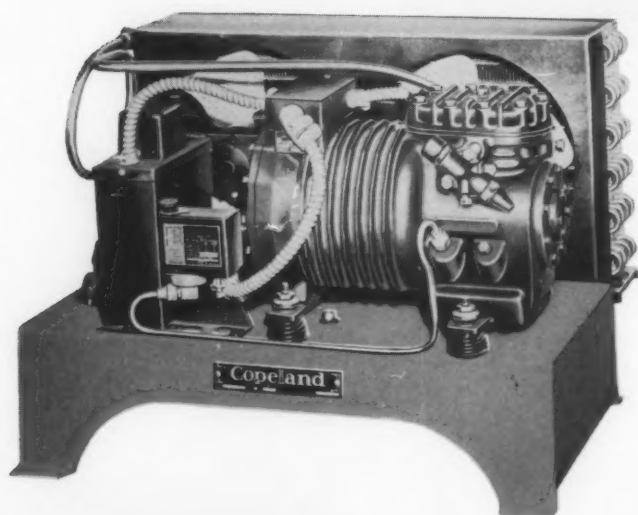
Refrigerants

Copeland

DEPENDABLE *Electric* REFRIGERATION

the line for

Greater
Sales!



COPELAMETIC

THE ACCESSIBLE HERMETIC
AND

COPELAND
OPEN-TYPE UNITS

With open-type units and
Copelametics in sizes of 1/6 H.P. through

7-1/2 H.P. Copeland broadens the range of your prospects . . .
shortens the distance to the name on the dotted line.

National advertising to your market helps you cash in on
Copeland's reputation. Copeland's recognized quality insures recom-
mendations and repeat sales.

Get behind the product that's behind you all the way . . . the
product that gives you a size for every refrigeration and air-con-
ditioning need.

Display and sell the new, complete Copeland line.

COPELAND REFRIGERATION CORPORATION • SIDNEY, OHIO

Manufacturers of

REFRIGERATION UNITS (OPEN-TYPE AND COPELAMETIC), WATER COOLERS, REFRIGERATORS

Circle No. 20 on Reader Service Card for more information
and **AIR CONDITIONING • JANUARY, 1951**

*here's
your answer*

TO REFRIGERATION CONTROL PROBLEMS!

Tough defrosting job? Water-cooled jobs that are "mean" to handle? Want to control multiple refrigeration systems with one switch... or control polyphase motors without line starters? The answer to these and other control problems is... PENN.

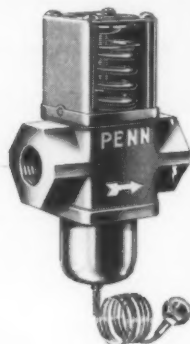
Yes... just like in most other products... there is also a big difference in automatic controls. And once you try PENN controls you'll learn that their performance *on the job* is the strongest recommendation for using PENN on every commercial refrigeration system.

In the complete PENN line, there is a type and model to fit your exact needs... a few types are illustrated here, there are many more. Take the first step in trying these better controls. Get your free copy of PENN's condensed catalog and price list. Ask your wholesaler or write **Penn Electric Switch Co., Goshen, Ind.** Export Division: 13 E. 40th Street, New York 16, U.S.A. In Canada: Penn Controls, Ltd., Toronto, Ont.



Penn Magnetic Line Starters are built in NEMA Sizes 0, 1 and 1½ and are available as open-type models for control panels or with General Purpose enclosures.

Series 246 Water Valves, zoned to keep water out of sliding parts, are built in threaded and flanged styles for all refrigerants and in sizes from ¾" to 2½".



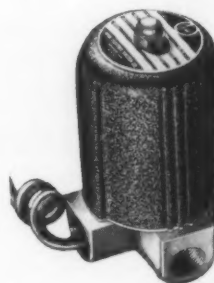
Series 321 Hot Gas Defroster provides fast, positive, automatic defrosting of evaporator coils at specified intervals.

Penn Series 325 Time-Pressure Defroster varies automatically the defrost period to satisfy local conditions... eliminates seasonal adjustments... avoids unnecessary shut-down time.



Penn Series 270 temperature and pressure controls have 2-pole construction and a direct reading calibrated scale which shows both cut-in and cut-out points.

Penn Series 221 Solenoid Valves are direct acting and may be used with all non-corrosive refrigerants as well as for water, oil or air.



PENN



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES
Circle No. 21 on Reader Service Card for more information



SALESMEN HAVE FIVE MAJOR WEAKNESSES—failure to utilize time properly, failure to plan sales effort, failure to put in enough selling time, lack of proper selling methods, and lack of product knowledge. That was one of several findings of a survey of its 14,000 members by National Sales Executives, Inc. The study was made in conjunction with Ohio State University. Other findings revealed that 45% of the sales executives polled spent only six hours or less a month in assisting each of their salesmen, that personal conference and field contact was the principal method of supervision, and that 72% of the executives found it effective to have not more than 15 salesmen reporting to one supervisor.

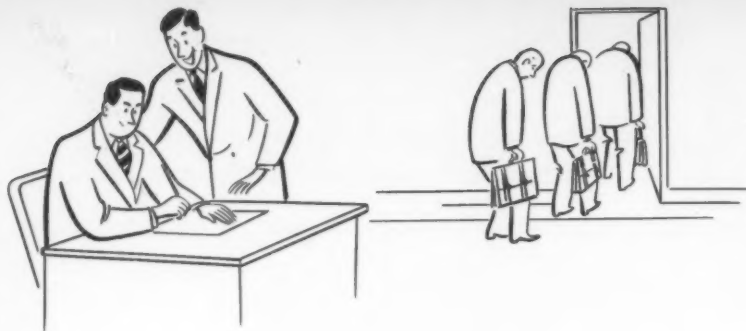
MAKERS OF LOW-TEMPERATURE CABINETS for stores and homes are being urged to act now to "sell" their segment of the industry to defense authorities, or be left to scramble for steel in a free market. The vital role which zero storage equipment can play in food conservation must be presented without delay to both the Agriculture and Commerce Departments, not only by equipment makers but by food packers, distributors, and brokers—who have an equal stake in the picture. With the NPA reportedly already planning to supplement the present allocation program with orders limiting production of "non-essential" civilian products using significant amounts of strategic materials, industry leaders are being reminded that there's little, if any, time to waste.

WHAT DO UNIVERSITIES NEED FROM INDUSTRY? There are four definite contributions which the engineering industries can make to the engineering universities to assist them in their goal of providing sound and adequate engineering education, according to Prof. C. A. Shreeve of the University of Maryland. The professor lists these contributions as follows: (1) New ideas or experiments for advanced research work. (2) Knowledge of old, used, or new equipment which might be available for educational purposes. (3) Job vacancies for engineering graduates. (4) Information about local manufacturing or commercial operations which may be used for engineering inspection trips.

COOPERATIVE RESEARCH IN FUNDAMENTAL PROBLEMS of heating, ventilating, and air conditioning is being sponsored by American Society of Heating & Ventilating Engineers in seven different colleges and universities. ASHVE grants funds to each of these institutions which utilizes its own laboratory facilities and faculty to perform the research under direction of the Society's committee on research. Current projects cover such subjects as air flow from ceiling outlets, high velocity air as it is used in factories, air friction in the various fittings attached to rectangular air ducts, and solar energy as a potential heat source for the heat pump.

ON-THE-SPOT STORAGE OF WHOLE BLOOD, made possible by a specially refrigerated unit used in the new "blood bank plan" at Scott Air Force Base in Illinois, has cut from 45 minutes to 5 or 10 minutes the interval of time required between the doctor's decision to give the transfusion and the actual receipt of blood by the patient. The whole blood is held at a constant 40 F., with all possible safeguards to insure even temperature and purity. The refrigeration unit is sealed with a dated seal and a special lockswitch protects the electrical plug-in from loosening as a result of machine vibration.

A HAMMER-PROOF FINISH for refrigerators and similar appliances has emerged from the research laboratories of Glidden Co. in the form of a new enamel that resists not only hammer blows, but also rust, salt, fog, and acids. Tests demonstrated that a surface finished in this new enamel might be dented from the force of a blow but that the enamel itself would not break. The new product contains the element silicon, combined with carbon products.



The Fourth Man Made the Sale...

...he dug down through hearsay to get at the true facts

HERE'S proof that the customer *isn't* always right! Three salesmen of commercial refrigeration equipment already had called on this prospect—and all three had given up. Yet the fourth man closed the deal.

The "stumper" in this case wasn't the usual kind of sales resistance. It wasn't price or preference for another manufacturer's model. The obstacle was simply an assertion by the prospect that his electrical facilities were limited and would not carry the additional load which would be imposed by the new equipment.

There was nothing really startling about the method used by the fourth—and successful—salesman. He was merely determined to find out if there wasn't perhaps an unfounded assumption—an unintentional error—in the facts as presented by the prospect. And the error he discovered netted him a \$4000 sale.

It happened in the trading area of C. H. Walden & Co., Inc. of Erie, York distributor for the northwestern section of Pennsylvania. The prospect was a good-sized hotel; the equipment to be sold, a battery of automatic ice cube machines.

The difficulty was that the hotel had direct current, and the automatic ice makers came equipped with a.c. motors. Well, why not simply install d.c. motors on the equipment? The answer was easy. Cost of the changeover would have been about \$500, and the prospective customer refused to pay this sizeable "extra" in addition to the total investment of \$4185 originally contemplated.

Yes, there was some a.c. wiring in the building, the hotel director explained, but just enough for a few lobby lights. The a.c. wires already were overloaded, and not another bulb could be put on these lines. This statement was backed by the considered opinion of the hotel's maintenance engineer.

It was at this point that each of the first three salesmen had shrugged his shoulders, mumbled his regrets, and left for the next call on his list.

It was at this same point that the fourth sales representative—Walden's commercial sales manager A. L. Patrizia—started thinking fast. Could a few lobby lights overload the a.c. wires, he asked himself? How could the hotel's maintenance man know for sure? Wasn't there some authority that could be consulted on this point—a point which said "No!" to a very nice sale?

Suddenly he hit upon a simple way of establishing the real facts in the case. He asked the hotel manager for permission to check with the electric power company. This was gladly given.

The utility sent one of its electrical engineers to check back on the hotel's wiring. The investigation developed this information:

The hotel's a.c. line wasn't overloaded at all. The trouble lay with an obsolete entrance switch, which caused the hotel to lose current. The switch could be replaced for \$35. With this adjustment made, the a.c. line into the building would be fully adequate to carry the load of the three ¾-hp machines which figured in the proposed sale.

The hotel management was presented with the true facts of the building's a.c. power load, and it wasn't long after that the first machine was installed. Three months later the hotel bought the two additional machines, one equipped with a crusher. The three units proved sufficient for all of the hotel's ice requirements.

We don't like to point, but the moral of this little episode is that a salesman's insistence on satisfying himself by obtaining the *real facts* regarding a prospective installation still pays off in blue chips.



SUNISO ENDS EMERGENCY CALLS

**Switch to Suniso Oil Eliminates Wax Problem,
Assures Free Operation of Starting Mechanism**

A bakery was experiencing trouble with a 2 hp. compressor used to operate an ice cream maker and hardener. Frequently it failed to start, causing the temperature to rise and the ice cream to melt. Each time, a serviceman had to be called in to overhaul the starting mechanism. Finally a thorough cleaning with heat and chemicals became imperative. When torn down, the refrigeration system revealed heavy wax deposits on the

thermostat valve, solenoid starter, strainers, and coils.

Realizing that the original charge of oil had been causing the damage, the serviceman recommended that the unit be recharged with Suniso. This was done, and difficulty in starting is no longer experienced.

Such dependable performance is the reason why Suniso Oils have long been the predominant choice of original equipment manufacturers throughout the refrigera-

tion and air-conditioning industry.

The different grades of Suniso Oils have extremely low pour points and low wax-separation points. All have exceptionally high dielectric strength and high resistance to chemical change when mixed with Freon or any other modern refrigerant. Ask your Suniso jobber for a free copy of the illustrated booklet "Lubrication of Refrigeration and Air-Conditioning Equipment" or write Department RI-1.

SUN OIL COMPANY • Philadelphia 3, Pa.

In Canada: Sun Oil Company, Ltd.
Toronto and Montreal

SUNISO REFRIGERATION OILS

"JOB PROVED" THROUGHOUT THE INDUSTRY

Circle No. 22 on Reader Service Card for more information



REVIEW BEFORE YOU PREVIEW

First rule of safety in driving a car is "eyes front", but in operating a business a periodic long look backward may save you from many a serious mishap on the road ahead. Here are a few pertinent questions to ask yourself at the end of each business year—and a few suggestions to help make the answers come out right during the next twelve months.

WHEN the year-end inventory has been taken and the books are audited early in the New Year to determine the net profit and tax, the average commercial refrigeration dealer feels that his work for the prior year is over and he looks forward to the next year's operations.

It is axiomatic that foresight is essential to successful achievement, but foresight without hindsight to guide it, seldom achieves success. One must look backward analytically before one can look forward with wisdom.

Few businessmen, however, look behind to help them look ahead. The common practice is to focus attention on the net profit shown on the annual income statement, compare it with the net of prior years and exult or cry over the outcome.

This cursory attention paid to the prior year's operating results begets inefficient management. The figures on the annual operating statement are emissaries of important business facts that the reader needs to guide him toward profitability the next year,

hence, he should review his annual statement thoroughly, and if necessary, dig into the recordings in his books to get the data needed to guide him in the management of his business during a subsequent period.

These are the principal questions to ask yourself when reviewing your business activities for the prior 12 months.

Did your net profit increase or decrease during the past year? Why?

Too many operators accept an increase or decrease in annual profits without knowing the "why" behind the result. This is definitely bad business practice. Unless you know *why* you get the results you do, you're doing business "in the blind," taking pot-luck.

No businessman can be assured a profit, but he can bolster his chances for success by reviewing operations at the end of a period so that he knows what he did to get what he got.

There are so many different reasons why one will find an increase or decrease in profits on an operating statement that we shall not try to detail them here. Each dealer will have to mull over his own figures to find out the reason for any variance.

Often such investigations will disclose weaknesses that can be corrected in subsequent periods, or may reveal certain effective methods that have increased sales or profits. In the hectic activity of a busy year, the effectiveness of a certain advertising campaign, high customer turnover, inferior workmanship or low-grade materials, and other such important factors may be forgotten, yet they may have been a prime reason why profits were higher or lower on a current year's business.

What is the return on capital investment? Is it higher or lower than prior years?

In the final analysis, this is the best yardstick of managerial efficiency. Many operators think only of the profit on sales, but this figure is not conclusive.

The return on your net worth is the real arbiter. If this return is decreasing, you had better overhaul your business practices from start to finish.

There are many reasons why this return is often too low. You may

have too much money invested in your business for the sales you get, your equipment may be in poor shape, your help may be inefficient, your customer turnover may be too high, you may be charging off too little depreciation and your net worth may be flooded with water, management in general may be bad, etc.

Only a complete renovation of your business practices and figures will disclose the reason for a low return on net worth or invested capital and you'll have to make a searching analysis yourself or employ a commercial counselor or accountant to aid you.

Is your margin on sales up to standard?

If you are slipping on margin, you are in a bad way because this figure should remain high enough to cover overhead and net profit. Considering the limited net earned in this field, the margin does not have to slip far to put you in the red.

You are at a disadvantage unless you departmentalize, because margins on certain lines or on certain types of sales, such as repairs and service as against installations of new equipment, are higher than others. This is usually the reason why the margin percentage as shown on a profit and loss statement will register a decrease, even though the sales volume remains the same or increases somewhat.

This has mystified many operators. The explanation is simple.

One year an operator may sell a high percentage of high-margin lines or he may run heavy on new installation sales where the spread is substantial. In that year the composite margin for the high-margin and low-margin sales may average high.

The next year, he may sell a great deal more service in which the costs are predominately labor on which there is a narrow margin or net, and the reverse may be true though the sales volume has increased.

Watch your margin. Keep it up to standard. Make sure it provides the spread you require for the net profit you anticipate.

Have your job costs gone up or down?

To answer this question the reader needs job costing forms for installation and service work which, as many

Continued on page 44



This architect's sketch shows the winter chalet of the Grossinger Hotel & Country Club where a single cooling plant does double duty by freezing ice for the skating rink during the fall, winter and spring, and air conditioning the main hotel building in the summer.

Double-Duty System

A DOUBLE-DUTY refrigeration plant, believed to be the first of its kind in the world, has successfully passed through its first complete annual cycle of operation at the Grossinger Hotel & Country Club, Grossinger, N. Y.

This unique installation furnishes ice for the resort's new skating rink during the fall, winter, and part of the spring, and air conditions the hotel's spacious main building during the summer.

The ice rink has a net surface area of 180 x 30, which is the regulation size for hockey. For winter use the refrigeration plant cools brine within a range of 17 to 20 F. For summer use a simple but ingenious throw-over switch has been installed to raise the temperature of the brine to a 42 to 50 F range. This provides the required temperature conditions for the hotel building itself, which contains the dining room, night club, lobby, recreation rooms, and a considerable number of guest rooms.

The rink contains approximately 45,000 feet of pipe. It requires at peak-load operation approximately 400 hp of electrical equipment, which necessitated the installation of a new high-tension service as well as a complete transformer substation. All the controls are mounted on a switchboard of the dead-front type, with only a few pilot lights and handles needed to operate the powerful machinery.

The cooling system, which uses Freon, is provided with two evaporative condensers connected in parallel with an automatic sump arrangement to stop the water flow whenever the danger of freezing approaches. The machinery is located at the skating rink, approximately 200 feet away from the main building.

The air conditioning system was planned with the knowledge in mind that the principal load requiring cooling is the guests, and that as the people go from the dining room to the lobby, to the night club, to their rooms, and to other areas in the building, the air conditioning demands for the over-all project remain practically constant but the cooling is needed in different sections.

Therefore, to operate the system economically and efficiently, and cover a relatively large area with a minimum of machinery, a complicated system of thermostats automatically adjusts each area to properly maintain the temperature and humidity according to the occupancy load of that area.



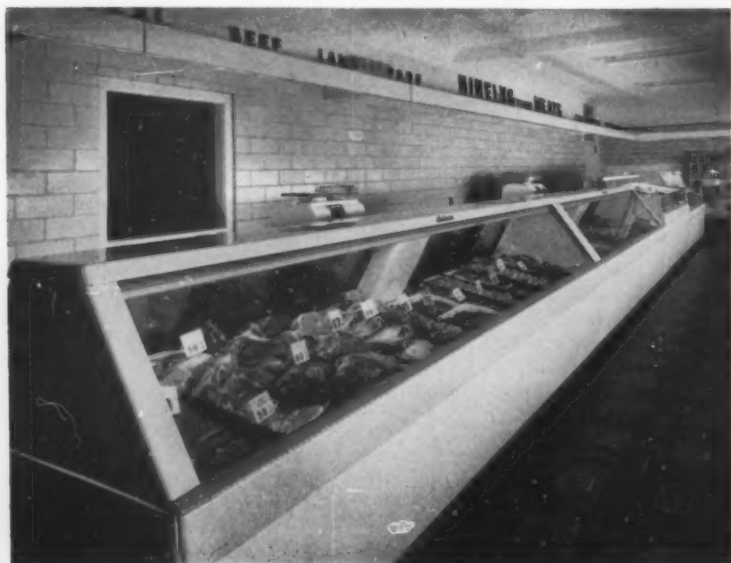
THEN

Fifty years ago, around the turn of the century, the meat department of Hinely's food market in Youngstown, Ohio, looked like this.

Chain store competition has made modern refrigeration a must for successful food merchandising. Here's how one independent market has managed to hold its own with the chains by following the example they set

Today it looks drastically different, thanks to a continuing modernization program in which these gleaming cases play a big part.

NOW



Meeting

ONE of the most effective defenses which the independent food merchant can employ to protect himself against the onslaught of chain store competition is to modernize his merchandising methods and enhance his store's sales appeal through the installation of up-to-date fixtures and refrigeration equipment.

Recognition of this fact, and an intense determination to do something about it, explains why Hinely's Finer Foods, well known to Youngstown, Ohio, shoppers for nearly 50 years, now operates one of the most modern and completely refrigerated super markets in that busy industrial community.

Hinely's history ever since its founding just after the turn of the century has been one of periodic remodeling in order to keep up with the changing trend of the times. The store's most recent move into a new and completely equipped super market set-up was the clincher which convinced the management that plenty of refrigeration equipment of the right type is the best investment any food merchant can make in his future.

If you're interested in facts and figures, the new Hinely super market does a 75% greater dollar volume of business than the old store—and adequate refrigeration facilities provide the key to its entire merchandising program.

Here's the lineup of commercial refrigeration equipment installed in the new Hinely market by Gene Kreitzburg of Kreitzburg Refrigeration Service, who has been handling Hinely's refrigeration needs for more than 20 years:

4 10-foot sections of open-type vegetable cases arranged in a continuous display.

the Challenge of Chain-ging Times

2 10-foot service meat cases and one 10-foot open section for self service meats, also arranged in a continuous display.

1 8-foot self-service low temperature case to merchandise a complete line of frozen foods.

1 self-service low temperature case located near the check-out counters to spur impulse buying of packaged ice cream.

3 walk-in coolers for the bulk storage of meat, produce, and frozen foods.

This adds up to quite a bit of refrigeration equipment for this 55x75-foot store, but it's really only the beginning. Already the Hinleys realize that certain refinements will be necessary in order to give their customers the maximum amount of service for which the super market was planned.

Gone are the days, the Hinely brothers point out, when a merchant put in a case and figured it would be good for 20 years. Present-day merchandising trends are apt to change fast, and the measure applied by the modern merchant is a fair rate of return in proportion to the amount of the investment, rather than any arbitrary time limit set on the life of the equipment.

Hinely's plan for keeping service "up to the minute" includes expansion of the present 8-foot frozen food section to 16 feet through addition of a matching case. Another major refinement will be the enlarging of the dairy department by the addition of multiple-deck cases which will double the display and storage capacity of the equipment without increasing the amount of floor space it occupies.

As of old, Hinely's still is featuring "Finer Foods." But while the store has maintained its "better class" of trade from the earlier days, it also has greatly improved its competitive position in regard to the large-volume items of standard merchandise which play such an important part in its current operations.

The new market's three walk-in coolers were installed in a bay at the rear of the store, with the low-temperature cooler sandwiched in between the produce cooler and the meat cooler.

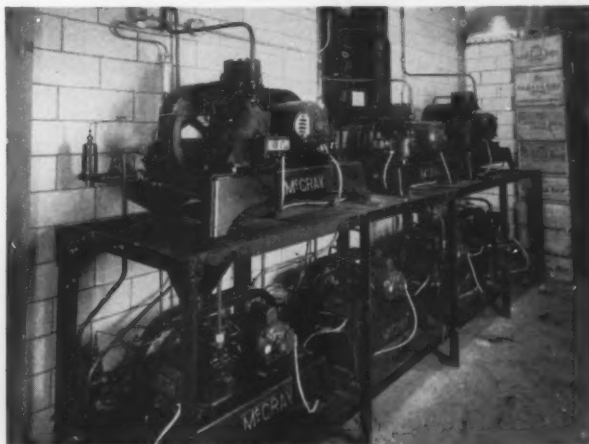
This arrangement minimizes the number of outside walls and consequently provides the utmost economy in operation. The store's management estimates that the efficient control of heat leakage provided by this compact

Continued on page 56

This interior view of Hinely's new market gives some idea of the extent of the refrigeration equipment and other fixtures installed.



Seven of the nine condensing units which power the Hinely installation are mounted on this double-deck stand. Two cases are self-contained.





REDUCING NON-REVENUE REPAIR CALLS TO 1.5%, this improvised electric motor tester has developed into a real profit builder for the Denver contracting firm which designed it by proving itself in actual practice to be a . . .

CURE for CALL-BACKS

AN EXCELLENT example of how the ingenuity of one commercial refrigeration and air conditioning contractor has materially reduced the firm's operating costs is the electric motor tester which was built up from scrap iron and spare parts in the shop of Snodgrass & Smith, Denver, Colo.

Through developing a reliable method by which both the power and amperage of any motor can be tested quickly, this contracting company has eliminated many expensive call-backs, or non-revenue repair calls, which formerly originated when blowers, actuating motors, and similar equipment installed in customers' premises failed after the initial repair job had been completed.

Now, through a 12-minute test given every motor on all equipment in-

stalled and serviced, such call-backs have been cut to 1.5%, resulting in a highly valuable saving per year.

The testing unit is built around a waist-high bench welded together from scrap iron. At one end of its 5-foot length is a heavy iron platform to which motors to be tested may be secured by means of movable U-bolts and wing nuts.

A pulley is secured to the shaft of each motor tested, and a V-belt is used to connect this pulley with a step-pulley mounted in the middle of the bench which makes it possible to vary the rpm ratio of a third pulley mounted on a shaft at the opposite end of the bench.

Mounted on the shaft with this third pulley is a 9-inch brake drum. This drum is snubbed by a 2-inch

wide asbestos strip and leather brake shoe which is looped around the drum and held in place by flanges.

One end of this brake strip is fastened to another pulley mounted on a shaft directly above the drum. The other end is secured to the bottom of a suspended brass scale of the type which used to hang in grocery stores.

The brake strip is tightened on the brake drum by depressing a 3-foot lever fastened to one end of the shaft which supports the last-mentioned pulley. This action winds the brake strip around the pulley, thus snubbing it against the brake drum and applying a force directly measurable on the scale, which registers up to 50 pounds.

Power Output Checked

Each motor to be tested is fastened down to the platform, equipped with a shaft pulley, and hooked into the test set-up in the manner already described. When the switch is turned on, either 110 or 220-volt current is supplied through the test panel at the brake end of the bench. This panel is set up with five separately fused circuits.

As soon as the motor hits maximum rpm, the lever is depressed, snubbing the brake drum, and the maximum power output is determined by the pounds-pressure at which the motor stops. The contracting firm has worked out a scale of pounds-pressure for every horsepower motor handled.

Amperage Determined

Each motor tested must exceed this carefully calculated limit before it is considered ready for installation in any piece of equipment. The stopping point is determined by three tests in sequence.

At the same time, amperage of the motor is checked by an ammeter mounted on the power supply panel board. To determine amperage, the motor is run 2 minutes and then turned off for two minutes. This cycle is repeated three times. Amperage limits of each type of motor, like the power output, have been carefully worked out in advance by the contracting firm.

Total test time required for each motor is only 12 to 15 minutes, which the firm gladly allots as in-

Continued on page 44



IT PAYS to climb on the MUELLER BRASS CO. band wagon for . . .

- A full and complete quality line of protectively packaged refrigeration driers, valves, fittings and accessories—stocked and sold by your refrigeration wholesaler.
- Complete manufacturing facilities — from raw material to delivered product — under the strict control of Mueller Brass Co. craftsmen, technicians and engineers.
- A large, well-trained force of sales and field engineers to coordinate the laboratory and manufacturing facilities of the Mueller Brass Co. with your needs.

51



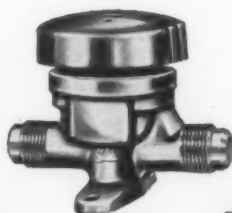
DRIERS AND FILTERS



WROUGHT COPPER FITTINGS



LIQUID INDICATORS



VALVES



FLARE FITTINGS



◀ STREAMLINE refrigeration products are individual and multiple packaged for complete protection.

Write for catalog R-150 describing complete line of STREAMLINE refrigeration products.



MUELLER BRASS CO., PORT HURON 12, MICHIGAN

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and AIR CONDITIONING • JANUARY, 1951

ABOUT People

Appointment of **C. E. Buchholzer** as president of Airtemp Division,



Chrysler Corp., Dayton, was recently announced by L. L. Colbert, president of Chrysler. Buchholzer succeeds W. C. Newberg who has been made vice president and director

of the corporation's Dodge Division in Detroit. Buchholzer joined Airtemp in 1936 as a job setter. In 1938 he was promoted to foreman in the machine shop and a year later to general foreman of the machine shop. By 1941 Buchholzer was assistant general superintendent. In 1944 he was made general superintendent of all Airtemp plants; in November, 1948, he was appointed national service manager in charge of merchandising spare parts and servicing equipment. Last year he was named assistant to the president, then vice president and director.

Appointment of **L. Gale Huggins** as product planner for central plant



air conditioners and large refrigeration machines at the General Electric Air Conditioning Dept. headquarters in Bloomfield, N. J., has been announced by G. K.

Iwashita, manager of product planning. Huggins most recently was vice president and general manager of Horix Mfg. Co., Pittsburgh. He is best known in the refrigeration field through his work with Westinghouse, where he was successively commercial engineer, product supervisor, assistant manager and later manager of the air conditioning department, and manager of

the contractor apparatus department. His patent on room air conditioners covers the arrangement of window-mounted units now used by most manufacturers of this equipment.

Walter G. Seeger, president of Seeger Refrigerator Co. since 1936, was elected chairman of the board and **John S. Holl**, executive vice-president, was elected to succeed him in the presidency at the company's annual directors' meeting.

In a move to streamline Sherer-Gillett Co.'s sales and manufacturing program, **L. O. Bower**, vice presi-



L. O. Bower



J. S. Twist

dent, has been named to direct all phases of sales planning, engineering, advertising and product costs, according to J. H. Coolidge, president. **John S. Twist** has been promoted to sales manager, and will supervise sales activities of the company's domestic distributors. Bower joined Sherer in 1943, became vice president in 1947 and a director in 1949. Twist has been assistant sales manager since 1949.

Appointment of **John C. Robbins** as factory manager of Detroit Lubricator Co. has been announced by C. H. Hodges, Jr., president.

Liquid Carbonic Corp., Chicago, has announced the appointment of **Peter G. Holliday** as sales manager of the newly formed contract manufacturing division.

O. P. Robinson has been appointed manager of the Pittsburgh district sales office of Cutler-Hammer, Inc. He replaces T. S. Towle, who is retiring. Robinson joined Cutler-Hammer in 1936 as a member of the Chicago district sales office,

and was transferred to the Pittsburgh office in 1940. As manager in Pittsburgh, he will also supervise the Cutler-Hammer office in Youngstown, Ohio.

Allen P. Livar has been elected vice president and a member of the board of directors of Warren Co., Inc., Atlanta, Ga. and **Roger D. Jacobs**,



A. P. Livar



R. D. Jacobs

secretary of the firm, has been assigned the duties of general sales manager. Livar, who assumes complete charge of manufacturing, has had many years of experience in the refrigeration and air conditioning field. Starting with American Radiator Co. in 1920 he later served in various sales and engineering capacities with Trane Co., Reynolds Metals Co., and Chrysler-Airtemp, where he became director of engineering and research. More recently he has served in executive capacities with a number of eastern concerns. Jacobs has been with Warren since 1928 and has worked in almost every department of the firm. He was named secretary of the company in 1945 and at the same time was elected to the board.

David Rusan has been appointed vice president in charge of manufacturing for Franklin Transformer Mfg. Co., Minneapolis, contract manufacturer of refrigerators, freezers and other products. Rusan formerly was with Seeger Refrigerator Co. He will

Continued on page 55

West Coast Show Draws Nearly 2000

NEARLY two thousand men identified with the refrigeration industry attended the 1950 West Coast Refrigeration and Air Conditioning Educational Exhibit and Conference held on Nov. 17, 18, and 19 at the Long Beach (Calif.) Municipal Auditorium.

The three-day conference was a decided success from every standpoint. The conference was sponsored by the Refrigeration Equipment Manufacturers Association, with annual conventions being held at the same time in Long Beach by the Refrigeration Service Engineers Society and the Refrigeration and Air Conditioning Contractors Association.

Educational displays were furnished by 67 of the leading firms in the refrigeration industry. Educational talks by experts in the field of refrigeration including motion pictures and illustrated lectures completed the program.

A television set, portable radio, and electric toaster were won for the best entries submitted in a contest sponsored by Refrigeration Equipment Wholesalers Association. Prizes were won, in order, by J. B. Mathews, Escondido, Calif.; Carl Hogemeier, Pacific Grove, Calif.; and N. E. McDougal, San Diego.

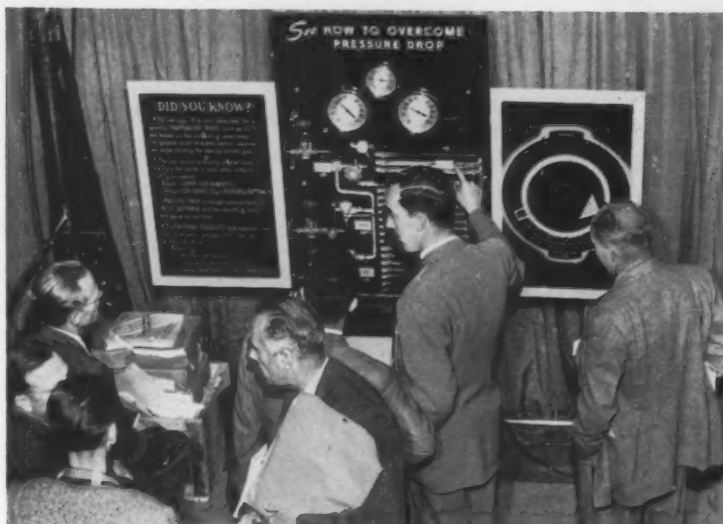
Detroit Lubricator Co. again proved to have the most interesting display in the eyes of the refrigeration service engineers with Mueller Brass Co. and Wagner Electric Co. in second and third place.

The following new officers of the Refrigeration Service Engineers Society were elected at its 13th annual convention held in conjunction with the Long Beach conference:

Cecil R. Visger, Kansas City, Mo., president; Carl W. Neisel, Corpus Christi, Tex., first vice president; J. D. Nall, Miami, Fla., second vice president; M. R. Hanks, San Diego, Calif., treasurer; H. T. McDermott, Chicago, international secretary.

The next Refrigeration and Air Conditioning Educational Conference, scheduled by the Refrigeration Equip-

Continued on page 58



PRIZE WINNING DISPLAY was this booth of Detroit Lubricator Co., voted the most interesting exhibit at the Long Beach educational conference.



Newly elected officers of the Refrigeration Service Engineers Society elected at the 13th Annual RSES Convention in Long Beach, Calif. in connection with the REMA-RSES West Coast Educational Conference. Left to right, bottom row: M. R. Hanks, San Diego, Calif., treasurer; Carl W. Neisel, Corpus Christi, Tex., first vice president; Cecil Visger, Kansas City, Mo., president; J. D. Nall, Miami, Fla., second vice president; H. T. McDermott, Chicago, Ill., international secretary. Middle row: E. Hanson, director; J. Lock, director; Lou Levy, director; J. Turner, director; Harry Dike, director. Top row: William Tierney, director; J. Mendell, director; J. L. Hall, director; Floyd Lilley, director; Paul Reed, director. Not shown—Henry Gullatt, director.



PRESENCE OF NAVY PERSONNEL from nearby units underscored the increasing importance of refrigeration and air conditioning activities in the armed services.

New Prospects! New Profits!

when you offer **TEMPRITE'S** Carbonator and Beer Cooler Installation



Here is your answer to a long-standing need for a compact draught beer, soda water and sweet water dispensing system . . . for taverns, bars, clubs, hotels and cafes! The complete, compact installation shown requires a space only 11" wide x 20" long x 15" high. A Temprite Instantaneous Beer Cooler and a Temprite Instantaneous Carbonator can easily be installed in any new or existing coil box. This system can dispense up to 60 gph of carbonated water; one to three brands of constant 40° F. draught beer; and ample cool sweet water.

Beer is cooled to just the right temperature through the interior stainless steel coils of the famous Temprite Instantaneous Beer Cooler. Normal temperature city water is efficiently converted to sparkling soda water in the Temprite Instantaneous Carbonator and then

cooled through the upper exterior coil on the beer cooler, just before being dispensed. The lower exterior coil cools up to 8 gph of plain sweet water.

There is an unlimited profit opportunity for refrigeration men who can offer Temprite's new combination Carbonator and Beer Cooler installation. The demand for new installations of this type is increasing daily; and a ready-made market exists for the sale of Temprite Carbonators to the thousands of satisfied users already equipped with Temprite Beer Coolers.

You can now offer your customers these 2 compact Temprite units, with assured long life; trouble-free service; and at really worth-while operating economies. *New Prospects and New Profits can be yours! Write for complete details today!*

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41 PIQUETTE, DETROIT 2, MICH.

Please send me complete details on your new carbonator and beer cooler application.

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"Be right with Temprite"

Temprite

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CONTRACTORS

NEWS • ACTIVITIES • PLANS

Ted Reina New RACCA Head; "Day with Government" Popular

THE latest authentic information on inventories, priorities, allocations, price, wage and credit controls, and on what the military are buying was outlined for members of the Refrigeration and Air Conditioning Contractors Association at the special all-day conference on mobilization problems during RACCA's fifth annual convention Nov. 16 and 17 in Long Beach, Calif.

Idea of the special "day with the government" program, at which RACCA president Bob Noll presided, was to present to members forecasts and discussions by qualified authorities so that contractors could plan their business soundly in the days ahead, and adjust their operations to mobilization requirements and opportunities.

Discussion on Priorities

Walter E. Elieson, of the Los Angeles office of the U. S. Department of Commerce, opened the program with a discussion of "Inventories, Priorities and Allocations." He discussed these topics from a policy and procedural angle, and covered both regulations now in effect as well as those planned for the near future.

"Price and Wage Controls" were discussed by Thomas F. Neblett, Los Angeles labor relations consultant and formerly chairman of the War Labor Board on the west coast. The speaker outlined probable developments in this important field, and made several predictions as to the prospective plans of the government on price and wage control matters.

The next speaker, C. E. Potratz, of the Federal Reserve Bank of San Francisco, covered "Credit Controls and Regulations." He explained existing credit controls and official in-

terpretations of them, particularly as they apply to refrigeration and air conditioning contractors.

Luncheon speaker, Harry Blythe, advisor to the chairman of the Munitions Board, Washington, D. C., and president of STD, Inc., Alliance, Ohio, outlined "Industrial Mobilization Plans for 'M Day'". This was an outline of the master plan for mobilizing 100,000,000 Americans. The



"In a location like this it's no wonder that compressor overheats!"

speaker pointed out that during World War II 5,000,000 items were produced for the government by more than 250,000 separate manufacturers, with 63% of the materials being bought from 270 companies and 50% of that being produced by smaller companies who sub-contracted the work.

First speaker at the afternoon session, Maj. William T. Armstrong, area field officer of the Selective

Service System in San Francisco, discussed "Manpower Needs of the Selective Service System." Maj. Armstrong covered the policies and functions of selective service, and outlined probable programs as far as future calls are concerned.

Last speaker of the day was Comm. Philip Ashler, U.S.N., chief of the small business office of the Munitions Board in Washington. Talking on "Military Procurement," Comm. Ashler outlined the procurement procedures and methods of the armed forces, and the steps being taken to facilitate and expedite procurement of materials by the government.

He pointed out that during the coming fiscal year the military service expects to spend about \$25 billion, which is only about 25% of the military expenditures during the peak year of World War II. He offered suggestions and advice to RACCA members as far as the present regulations on procurement applying to the refrigeration and air conditioning industry.

Panel Discusses "Chiseling"

A special panel session on "Price Chiseling and What Can Be Done About It" was a feature of a dinner meeting sponsored by the Refrigeration and Air Conditioning Contractors Association of Southern California on the night of Nov. 16.

Panel members were Ralph E. Manns, of Ralph E. Manns Co., Wilmington; Gus Weiss, Thermalair, Inc., Los Angeles; Larry Brink, Market Refrigeration, Inc., Los Angeles; and Ralph M. Westcott, Los Angeles consulting engineer.

Panel members presented several brass-tacks aspects concerning undesirable practices as far as prices are concerned, which in turn prompted questions from the floor indicating that members in several localities are being confronted with some serious problems as far as "chiseling" is concerned. The discussion was informal, and most of those present entered into the factual, realistic treatment given to this controversial problem.

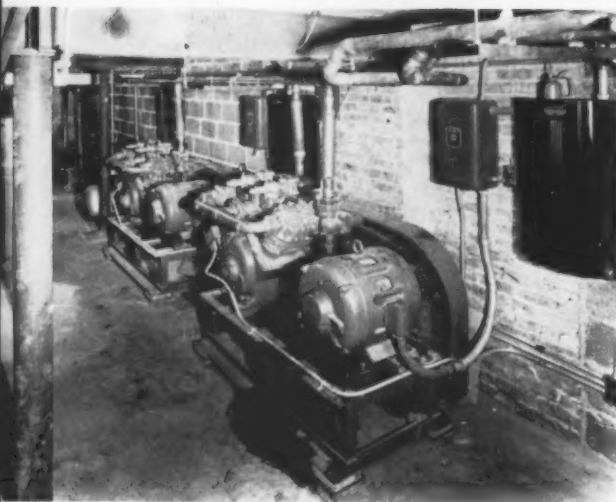
Reina Is New President

Ted Reina, M & R Engineering Co., Brooklyn, N. Y., was elected president of RACCA for the coming year. Lee J. Quinn, of L. J. Quinn Co., Inc., Cincinnati, was elected first vice president; Ralph W. Lampie, of Ralph W. Lampie Refrigeration Service, Richmond, Va., second vice president;

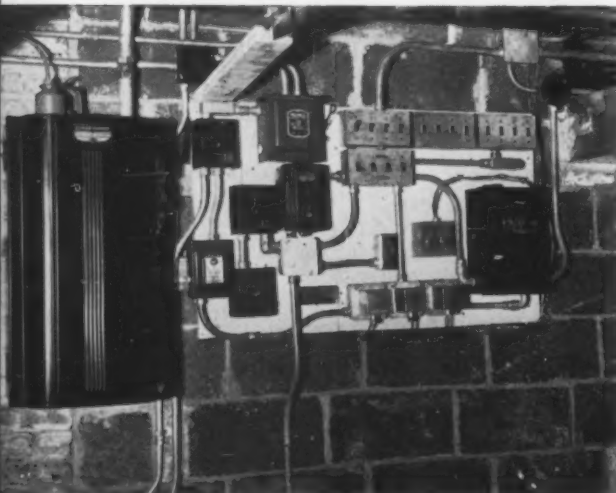
Continued on page 56



SAVINGS OF 60% in original equipment costs were made possible by using this industrial space heater as the heart of the year-around air conditioning system in a swank women's specialty shop in Evanston, Ill.



TWO 25-HP COMPRESSORS (above) supply chilled water to the system's cooling coils. MAIN CONTROL PANEL (below) provides for completely automatic adjustment of temperature to pre-determined requirements.



All-Weather

By Ralph J. Abramson
Consulting Engineer
Chicago, Ill.

THE problems of establishing and maintaining a physical atmosphere tailored for year-around comfort regardless of outdoor weather conditions are more complex in a fashionable women's specialty shop than they are in almost any other type of store.

From the moment a customer enters the shop, it is essential that she be surrounded with the most comfortable temperature that mechanical equipment can produce. This calls for paying critical attention to the design, installation and operation of summer air conditioning systems and winter heating systems.

A different approach to the problem was employed recently in designing an all-weather system for a new Bramson store in Evanston, Ill. What was achieved at

22-HP BLOWER draws 22,000 cu. ft. of air per minute into the system. Movable motor and vari-pitch sheaves allows for seasonal adjustment of air volume.



FILTER BA
circulated
prevents d

r Conditioning at 60% Off

this store may be the start of a new trend in designing heating and air conditioning plants for retail shops. This is the use of a high-capacity, industrial type warm air space heater in conjunction with a cooling coil arrangement to form a central combination all-weather system, precisely controlled and highly functional.

Bramson's is one of the first installations of this type.

Perhaps the outstanding feature of such a system is its economical initial cost. Originally, a conventional heating and air conditioning system was designed for the Bramson store, involving utilization of a steam boiler and individual air handling and conditioning units. The lowest bid received for that type of system was approximately 60% more than the total cost of installing the combination system.

In actual figures, it cost \$23,000 for the system that was installed, in contrast with a low bid of \$37,500 for the one originally contemplated. The savings, therefore,

In addition to these initial cost savings, a substantial amount of maintenance has been eliminated by the new combination system. There are no heating or air conditioning supply pipes running throughout the building; no individual air handling or conditioning units to service. This, of course, permits utmost utilization of available sales and storage space.

All mechanical equipment is concentrated in a small area of the basement, easily accessible. The same network of ducts, concealed in walls and ceiling, are used for both heating and air conditioning purposes. Air handling ducts require no maintenance and are not subject to troublesome corrosive influences such as those which attack "wet" systems.

Heart of the combination heating and air conditioning system at Bramson's is a direct-fired, warm air space heater developed by Dravo Corp., Pittsburgh, and used

Continued on page 64

ough which both fresh and re-
before being chilled or heated
n of dust and other impurities.

INDIVIDUAL OUTLETS in each of the fitting rooms
which flank this aisle maintain air temperature at
a level slightly higher than that in sales areas.

LARGE RETURN GRILLES located in out-of-the-way
areas draw the air back to the mechanical room in
the basement. A common duct system is employed.



SERVICE ENGINEERS! DEALERS! Cash in on the
compressor replacement market!



COMPRESSOR BODIES

FIT MOST MAKES of condensing units

- Fit most brands of refrigeration or air conditioning equipment.
- Compact, easy to install.
- Shipped complete with flywheel and service valves.

New life in old refrigeration equipment... when you replace the compressor with a new General Electric high-capacity compressor body. You can *stretch* the lifetime of the equipment...and you'll get real G-E dependability and economy...*at low cost!* Here's how:

Many times a condensing unit that's old and inefficient can still do a satisfactory job if you replace the compressor. And, of course, simple compressor replace-



Available at G-E Wholesalers
all over the U. S.

ment is comparatively inexpensive. *For best results*, be sure to recommend one of the new, top-quality G-E compressor bodies. They're easy to install—they fit most condensing units and types of equipment. And don't forget—it's easier to sell your customer on a replacement job...when he knows he's getting *General Electric* quality and dependability. G-E compressor body prices are *right*. Check them today!

mail this coupon TODAY!

GENERAL ELECTRIC COMPANY, Air Conditioning Department,
Section CR-1, Bloomfield, New Jersey

Please send me your new specification sheet on G-E compressor bodies ☐

Please send me new specification sheets on G-E condensing units and catalog of replacement parts ☐

I am a service engineer ☐ dealer ☐ contractor ☐

Name.....

Company.....

Address.....

City.....

Zone..... State.....

CHECK THESE G-E COMPRESSOR FEATURES!

Dependability! High quality materials throughout

Quiet Operation! Counterbalanced crankshaft

Sure Lubrication Check! Oil sight glass

Low Maintenance, Fewer Leaks! Special G-E balanced bellows shaft seal

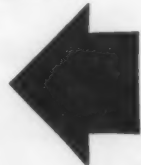
Low Power Costs! G-E high volumetric efficiency

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International Heating &
Ventilating Exposition

Philadelphia, Pa. Jan. 22-26, 1951



You can put your confidence in—

GENERAL  **ELECTRIC**

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JANUARY, 1951 • COMMERCIAL REFRIGERATION

NEWS OF THE INDUSTRY

ALLOCATION OF "KEY ITEMS" SEEN

A system of complete allocation of key materials from producer to consumer probably will be in effect by next July, in the opinion of Manly Fleischmann, general counsel for the National Production Authority.

Fleischmann based his prediction on the assumption that military expenditures by next summer will have grown to a \$50 or \$60 billion per year rate.

The controls program which he visualizes would be similar to the "controlled materials plan" used by the War Production Board during World War II.

The program also could mean, the NPA official said, direct cut-backs in production of "some non-essential products," such as some home appliances, for example. Fleischmann added, however, that plans for action of this type are not under consideration by NPA officials at this time.

RHEEM TO PRODUCE GAS REFRIGERATOR

Rheem Mfg. Co. is preparing to produce and market a new gas-absorption type of household refrigerator, president R. S. Rheem announced recently.

The refrigerator, developed by Clayton and Lambert Mfg. Co., Louisville, Ky., will be made by Rheem under an exclusive agreement just concluded between the two companies.

In the process of development and testing for more than five years, the new refrigerator will be available in popular capacities. It will be sold under the Rheem name. Further testing and design study will be carried out prior to manufacture of the unit in commercial volume.

FREON DEVELOPERS HONORED BY ASRE

Public recognition to the three men principally responsible for the development of the Freon family of refrigerants was made by American Society of Refrigerating Engineers during the 46th Annual Meeting of the Society in New York City.

A "certificate of recognition" was presented to Thomas Midgley, Jr., posthumously, and to Dr. Albert L. Henne and Robert R. McNary on Tuesday evening, Dec. 5. C. F. Kettering, vice president and research consultant of General Motors Corp., who instigated the research that led to the discovery of Freon-12 as a safe refrigerant, made the awards.

The awards committee of ASRE selected the Freon development as the most important single contribution made in the last 20 years to the growth and advancement of the refrigeration industry.

WINNERS IN G-E CONTEST NAMED

Climaxing more than two months of competition, the air conditioning department of General Electric Co. has announced winners of its 1950 packaged air conditioning sales contest. They are:

First, H. R. Arey, General Electric Supply Corp., Washington, D. C.; second, J. Siegal, Apparatus Distributors, Inc., Brooklyn, N. Y.; third, W. C. Loughlin, J. A. Walsh & Co., Houston, Tex. Arey won a complete home laundry, Siegal a table-model television receiver, and Loughlin a clock-radio.

Winners were determined by the number of air conditioners sold. Besides the competitive awards, each sale earned points that could be cashed in on G-E appliances.

HEADS ASRE



PAUL B. CHRISTENSEN

vice president and chief engineer of Merchants Refrigerating Co., New York City, is the new president of American Society of Refrigerating Engineers. He took office at the recent 46 annual meeting of the society in New York City.

FIXTURE DEALER NAMED IN SUIT

A suit asking \$8,550 in damages has been filed in Lincoln, Neb., district court by the Serveall Food Market against Midwest Fixture Co. of Lincoln for installing three refrigerated vending cases which allegedly were faulty.

Nate Bernstein and Howard Lotman, owners of the supermarket, charged that the cases installed in the store last spring did not preserve ice cream and frozen foods properly and did not maintain proper temperatures during hot weather. The cases complained of were of the same make as other self-service fixtures purchased for vending pre-packaged meats, dairy products and vegetables. These, according to reports, have performed satisfactorily.

The market asks \$5000 for loss of trade, \$3200 as the purchase price of the cases, \$300 for spoiled food products and \$50 in reimbursements to customers.

A-P CONTROLS IS NEW FIRM NAME

The Automatic Products Co. of Milwaukee has announced a change in the name of its corporate title. The company will now be known as the A-P Controls Corp.

According to E. A. Vallee, executive vice president of the corporation, the new name has been adopted to reflect more accurately the actual nature of the products the company manufactures.

One division of the company produces automatic and thermostatic expansion valves for refrigeration systems, as well as other refrigeration controls, including solenoid valves in all sizes, water regulating valves, constant pressure valves, strainers and driers.

The firm also manufactures a wide variety of controls for gravity-fed oil burners and claims to be the largest manufacturer of oil-level control valves for space heaters.

In addition, new types of controls for gas furnaces and heaters have been developed by the company and have found wide acceptance in the gas heating field.

MARSH BUILDS PLANT ADDITION

Construction is nearing completion on a large addition to the modern manufacturing plant of Jas. P. Marsh Corp. in Skokie, Ill.

The addition will increase production space by about 17,000 sq. ft. It is expected to be in operation some time in January.

The company completed and occupied its original Skokie plant only recently, but increased demand for Marsh products plus the recent acquisition by the company of the Electricmatic line of controls has necessitated the expansion.

WE TAKE CARE OF **THE drip**

Eastern

CONDENSATE DISPOSAL UNIT



Designed for the air conditioning field, here is a completely automatic, foolproof unit that removes condensate fluids from the receiver tank and pumps them to an outside drain. Simple to install . . . Low operating cost . . . Totally enclosed motor . . . Compact, rugged, rustproof construction . . . Quiet and reliable in operation.

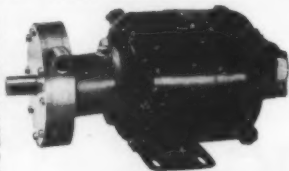
SPECIFICATIONS

Tank — Approximately 1½ gal. capacity with ¾" inlet, ½" outlet. Brass with black enamel outside.
Pump—Bronze centrifugal pump. Delivery app. 4½ GPM at 0 PSI and shut off of 12½ PSI.
Motor — 1/40 HP 3450 RPM, single phase, 60 cycles, 115 volt, totally enclosed, ball bearing, capacitor start motor.

Control — Controlled by a float operated switch, so set to pump out app. 0.8 gal. of condensate at each operation. Built-in check valve prevents the outlet line from draining back into the tank.
Overall Dimensions—5¼" wide; 9½" long; 12 15/16" high. Weight 21 lbs.

Investigate Eastern's Proven Pumps for ICE CUBING MACHINES

Designed for continuous duty under severe operating conditions, the Eastern Model D-11 Pump is a heavy duty centrifugal pump. Size: 10" x 5½" x 5". Weight: 18 lbs. Power: ½ HP, heavy duty, split phase, fully enclosed, induction motor. Available in 110 or 220 volts A.C. Maximum output: 8 GPM at zero pressure. Maximum pressure: 14.5 PSI at shut off. Furnished in special alloys for hazardous service. Built for dependable service.



MODEL D-11

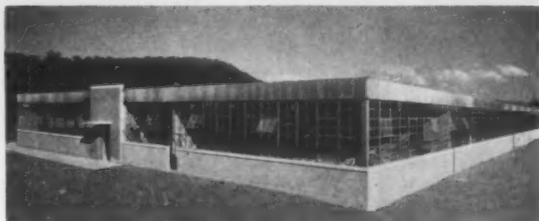
WRITE FOR COMPLETE CATALOG
Dept. A-11

Eastern INDUSTRIES

INCORPORATED
296 ELM STREET

NEW HAVEN, CONN.
Circle No. 26 on Reader Service Card for more information

CONNOR ENGINEERING BUILDS NEW PLANT



New Danbury, Conn., plant of W. B. Connor Engineering Corp.

W. B. Connor Engineering Corp., manufacturers of Dorex activated carbon air recovery and purification equipment and Kno-Draft adjustable air diffusers, has moved its main offices, plant and laboratories from New York to Danbury, Conn.

A steady growth in sales and particularly the need for greater research facilities led to the move, according to W. V. Davidson, Jr., assistant to the president.

The first new plant unit, a single story structure of 40,000 square feet on a ten acre plot, has been designed for assembly line production of all company products and includes a large

research area for work in the fields of air purification, distribution, and diffusion. Construction will begin shortly on a greenhouse and cold storage plant for atmosphere control experiments in flower cultivation and food storage.

Facilities and equipment for the evaluation of odor removal techniques covering wide variations of air temperature, odor concentration, humidity, air flow, etc., will be available, together with apparatus for the investigation of the sense of smell and the physical and chemical properties of solid surfaces affecting the retention or removal of odors.

*Serving America's
Finest Food Stores!*



There's an interesting story for dealers in "Bally MEANS BIG BUSINESS". Copies available.

COLDISPLAY 51"
All Purpose Case

...ONE OF 62 DIFFERENT
BALLY MODELS and SIZES

Bally

REFRIGERATED DISPLAY CASES
Bally Case and Cooler Co., Bally, Pa.

Circle No. 27 on Reader Service Card for more information

MITCHELL REPRESENTATIVES HOLD ANNUAL SALES MEETING



MITCHELL SETS PLANS FOR 1951

Sales representatives of Mitchell Mfg. Co. recently met at the Stevens Hotel in Chicago where the 1951 line was announced and sales plans were outlined.

Keynoting the meeting was an address by E. A. Tracey, vice-president of the room air conditioning division, who pointed out that "the sales volume on room air conditioners may well be the largest in the entire major appliance field within three to five years."

This anticipation was based in large measure on the enormous potential for room air conditioners and considers the fact that only one domestic refrigerator and one or two television sets are likely to be sold to the average American family. "It is quite likely that two bedrooms and a living room in the average American home will be equipped with a room air conditioner," said Tracey.

Two new models were announced—a 1 hp window unit with a capacity of 11,500 Btu/hr and a $\frac{3}{8}$ hp window unit with a capacity of 4,200 Btu/hr.

NEW FIRM MARKETS ICE CUBE CRUSHER

International Products Corp., Los Angeles, has acquired the entire facilities of the Gary Mfg. Co. of Los Angeles, reports William Lapin, International president, and the combined production capacity has made it possible to up the output of the "Kwik Kube Krusher". This unit is a completely adjustable, power operated ice cube crusher which has been widely distributed on the Coast.

LOCKER PLANT SURVEY SHOWS 11,400 NOW IN OPERATION

The first survey of frozen food locker plants by the U. S. Department of Agriculture since the war years shows the number of plants on Jan. 1, 1950, nearly doubling since midsummer of 1945. L. B. Mann of the Farm Credit Administration, speaking at the National Frozen Food Locker Convention in Chicago, said they now number 11,400, serve about 15 million people, and process 1.3 billion pounds of food yearly.

However, this survey—made by FCA and the Bureau of Agricultural Economics under the Research and Marketing Act—also points to some declines in this comparatively new industry. A drop of 16% in the average number of lockers rented and 16% in average volume of food processed per plant since the survey for 1945, made as of January 1, 1946, indicated that there was good reason why the building boom in new plants began to slow up in 1948.

High rental rates and service costs have caused some trouble spots. Rentals have mounted steadily over recent years until January 1, 1950, showed them averaging \$13 per locker as compared with \$11.40 in 1946 and \$9.80 in 1941. Rates for cutting, wrapping, freezing, and grinding services went up to average \$3.28 per hundredweight in 1950 as compared with \$2.37 in 1946 and \$1.71 in 1942.

Many locker plants have spread into other services to help counteract the decline in number of lockers rented and food processed

for each locker. Many rent unused and surplus space to commercial firms to store their goods at low temperatures. And this survey pointed to something new in the past 4 or 5 years—servicing home units. Estimates showed these 11,400 locker plants now servicing about 880,000 home freezer unit patrons, half of whom do not rent lockers.

Of all the plants reporting, 23% provided custom slaughter for non-locker patrons, 22% bought livestock so they could sell meat, 24% cured and smoked meat for sale, and 27% manufactured pork sausage for sale. In addition, 51% of the plants reported selling commercial frozen food, 43% whole-saled packer beef and pork, and 3% manufactured ice cream for sale.

Meat made up 87% of all food processed by these plants, fruits and vegetables 6%, poultry 4%, and game 3%.

Plants built since the war were considerably larger than in the early 40's, averaging 500 locker boxes per plant on Jan. 1, 1950 compared to 330 in 1940. Fewer of these lockers were rented on Jan. 1, 1950—only 387 as compared to 464 in 1945, a 16% decline from the 99% in 1945.

Average number of patrons dropped from 414 per locker plant in 1945 to 343 on Jan. 1, 1950, with the reported number of farm patrons declining from 73% to only 66% of total patrons. Actually, 72% of all plants are located in towns of 5,000 or less, with 40% in towns under 1,000.

"AIR" SYMPOSIUM ON ASHVE PROGRAM

"Man and His Relationship to Air" will be the subject of a symposium by leading scientists and engineers in the field, at the 1951 Annual Meeting of American Society of Heating and Ventilating Engineers. Six sessions during which 17 papers will be given are listed on the technical program. The meeting will be held in Philadelphia, Jan. 22-25.

Topics to be covered include heat pump performance and panel heating and cooling.

The 10th International Heating and Ventilation Exposition, opening on Monday, Jan. 22, and running concurrently with the meeting, will remain open one day longer, closing at 6 p.m. Jan. 26. All space has been taken and a wide variety of new products will be shown.

USAIRCO OFFERING SERVICE UNIFORMS

United States Air Conditioning Corp., Minneapolis, is offering to supply its franchised dealers with new sage-green work uniforms at a price lower than average retail, it has announced.

Uniforms consist of caps, gloves, unionalls, overalls, shop coats, pants, and shirts—all made for the company by a nationally known clothes manufacturer.

Servicemen can have their names sewn above the shirt pockets, and the name of the local dealer can be sewn on the back of the uniform, below the UsAirco insignia.

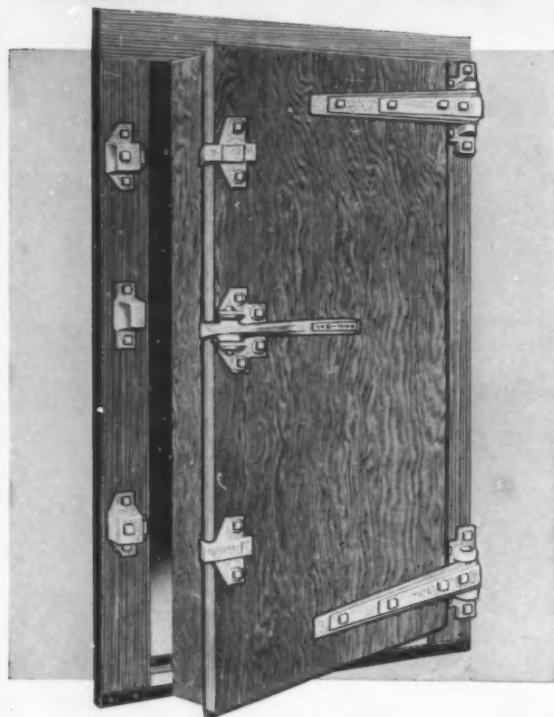
The new arrangement enables dealers to outfit their servicemen "uniformly, smartly, and economically," the company states.

BORDEN IS TAYLOR OUTLET IN N. E.

The A. E. Borden Co., Boston, wholesale refrigeration and air conditioning supply house, has been appointed New England distributor for the Taylor line of ice cream, custard and malted freezers.

This appointment was made by Tekni-Craft of Rockton, Ill., manufacturer of Taylor freezers. As a result of increased sales and user demands, larger facilities were needed.

NEW Jamison SERIES "50" DOOR



**FOR THE FIRST TIME ALL THESE
FEATURES OFFERED IN A STANDARD
COOLER AND FREEZER DOOR**

**Monopanel Construction
E-Z Open Two-Point Fasteners
Lo-Temp Gasket
Unbroken Insulation
Adjustoflex Hinges
Effective Vapor Barrier**

Only Jamison doors give you these extra features. For complete information and specifications, write for catalog 199.

JAMISON COLD STORAGE DOOR CO. • Hagerstown, Md., U. S. A.



*The oldest and largest builder of cold storage doors in the world
Circle No. 28 on Reader Service Card for more information*

42

OASIS NAMES 20 CONTEST WINNERS

Winners in its 1950 nationwide "Sweepstakes" sales contest have been announced by Ebco Mfg. Co. More than 1800 water cooler and air drier salesmen participated.

The five top salesmen, who received specially inscribed "Oasis" air driers in addition to regular prizes, were: R. J. Schweitzer, G-E Supply, Washington, D. C.; C. R. Fleming, G-E Supply, Detroit; Gordon Mueller, Inc., Long Island City, N. Y.; M. L. Trabue, Graybar Electric, Columbus, Ohio; J. G. Brooks, G-E Supply, Washington, D. C.

Others in the first 20 were W. B. Long, Cleveland; H. G. Mitchell, Columbus; E. D. Nye, C. M. Sharts, R. H. Davis, L. C. Peruzzie, Al Pohlman, Washington, D. C.; J. W. Brokaw, Kansas City; G. R. Copeland, New Orleans; C. N. Slater, Houston; W. A. Taylor, Richmond, Va.; S. E. Pearson, Pittsburgh; L. G. Bright, Philadelphia; Guy Walker, Chicago.

BELL & GOSSETT CO. WORKERS GET BONUS

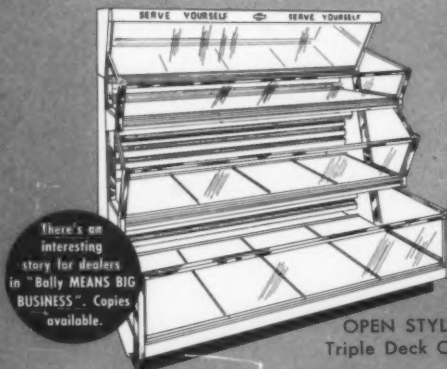
Office and factory employees of Bell & Gossett Co., Chicago, manufacturer of heat exchangers, condensers, receivers and centrifugal pumps for the refrigeration field, recently shared in a special bonus of approximately \$100,000 distributed by the company. Over 800 workers shared in the bonus, which was based on each employee's earnings for the period Dec. 1, 1949 to Aug. 31, 1950.

C. E. Pullum, vice president and treasurer, said the decision to pay the special bonus was based on the company's improved earnings for the first nine months of the current fiscal year.

CONNOR OFFICE IN NEW YORK MOVED

The New York City offices of W. B. Connor Engineering Corp. Danbury, Conn., manufacturers of Dorex activated carbon air purification equipment and Kno-Draft adjustable air diffusers, are now at 500 Fifth Ave., New York 18.

*Serving America's
Finest Food Stores!*



OPEN STYLE
Triple Deck Case

**...ONE OF 62 DIFFERENT
BALLY MODELS and SIZES**

Bally

REFRIGERATED DISPLAY CASES

Bally Case and Cooler Co., Bally, Pa.

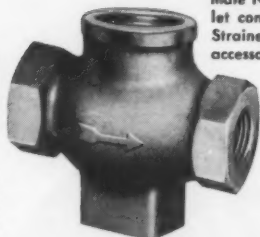
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JANUARY, 1951 • COMMERCIAL REFRIGERATION

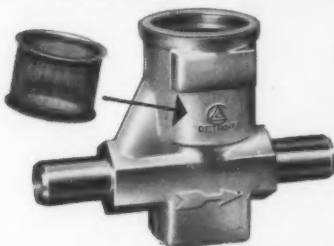
demand **DETROIT CERTIFIED**

VALVES

No. 685
STRAINER



683 in forged brass body available with either flare ($\frac{3}{8}$ " S.A.E. for $\frac{3}{8}$ " x $\frac{1}{4}$ " Reducing Nut) or sweat ($\frac{3}{8}$ " or $\frac{1}{2}$ " O.D.) connections.



683 also available in cast brass body with $\frac{3}{8}$ " female N.P.T. inlet and outlet connections. (No. 685 Strainer available as an accessory.)

- ★ New plastic-imbedded waterproof coil.
- ★ Rugged forged brass body.
- ★ Large integral inlet strainer protects sweat and flare types.
- ★ Connections available for flare, sweat or pipe thread applications.
- ★ Sturdy mounting boss.



*Eliminate
Trouble*

BEFORE IT STARTS WITH

DETROIT 683 SOLENOID VALVES!

One sure way to do your customers a favor is to install **DETROIT** 683 solenoid valves. You'll be doing yourself a favor, too, by positively eliminating the need for costly call-backs. Just check the outstanding features of the 683 and you'll see why. First, this remarkable valve is designed for adaptability

—three standard models available for flare, sweat or pipe thread connections. Add to this the waterproof construction, integral inlet strainer and "kick-off" spring for positive closure and you'll see that with the 683, trouble can't start because it can't get in! **DETROIT** solenoids are available in capacities from 3 to 20 tons Freon-12. So for replacement or new installation, demand **DETROIT** for the best in solenoid performance, service, economy!

DETROIT

LUBRICATOR COMPANY

5900 TRUMBULL AVE., DETROIT 8, MICHIGAN
Division of **AMERICAN RADIATOR & Standard Sanitary CORPORATION**
Canadian Representatives: **RAILWAY & ENGINEERING SPECIALTIES, LTD.**—Montreal, Toronto, Winnipeg



DETROIT HEATING AND REFRIGERATION CONTROLS • ENGINE SAFETY CONTROLS • FLOAT VALVES AND OIL BURNER EQUIPMENT • **DETROIT** EXPANSION VALVES AND REFRIGERATION ACCESSORIES • STATIONARY AND LOCOMOTIVE LUBRICATORS

Serving Home and Industry AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS HEATER • TONAWANDA IRON

Circle No. 30 on Reader Service Card for more information
and AIR CONDITIONING • JANUARY, 1951

CURE FOR CALL-BACKS . . .

Continued from page 30

insurance against costly call-backs.

"We never consider any repair or rebuilding work completed," reports K. M. Snodgrass, partner in the firm, "until the motor has checked out 100% on this device.

"All we had to purchase in order to build the test assembly," he points out, "was an arbor. Thus the device actually paid for itself with the first two call-backs which it eliminated.

"Thanks to this tester, we know for certain that each motor we handle will perform the job assigned to it. Our records show that only about 1.5 motors out of every 100 we service need any later attention for a year or more. Consequently, we can allow a guarantee on motors equal to that on any other part of the equipment. This factor has done a great deal to enhance our reputation and to build our business volume."

**BUY FROM YOUR
REFRIGERATION WHOLESALE**

READY SOON



A Big Addition to the Still New Marsh Plant . . . 25% more service-for-you space

It seems almost yesterday (actually 1948) that we announced the completion of our new modern plant at Skokie, Ill., close-in suburb of Chicago.

And now we are announcing the completion of a large addition to this still new plant!

Such swift expansion is no mere happenstance. Long before we built our Skokie plant we had planned it down to the last detail to give new scope to the production principles that have enabled Marsh products to set their own standards . . . for quality . . . for downright value.

How well we accomplished our objectives — how much we exceeded even our own expectations — is convincingly attested by the need for this big addition to keep pace with the ever-accelerating demand for Marsh instruments, heating specialties, and refrigeration equipment.

This increased manufacturing space will provide facilities to maintain Marsh quality standards while giving you Marsh products at a faster space. It is 25 percent more service-for-you space.

MARSH INSTRUMENT CO.

Sales affiliate of Jas. P. Marsh Corporation
Dept. P, Skokie, Ill.



The Marsh line for the refrigeration field includes Marsh Gauges and Dial Thermometers; the famous "Servicemen" line of testing thermometers and testing gauges; the Marsh-Electromatic line of water regulators, temperature actuated suction throttling valves, flow control valves, packless solenoid valves and other related controls.

MARSH

*Refrigeration
Instruments*

Circle No. 31 on Reader Service Card for more information

REVIEW-PREVIEW . . .

Continued from page 27

do not seem to realize, differ from the financial records showing income and outgo. With materials going up in price, the reader must tighten up on his cost control with better job supervision and accurate job costing.

Modern equipment is one of the best cost-controllers. It minimizes labor cost, materials cost and overhead expense. How is your operating equipment? Check it carefully and replace or overhaul any mechanized units that keep your costs high.

There are so many ways for loss-leaks to develop in the installation and servicing of refrigeration equipment that we cannot detail them here. We can merely point out that if the dealer finds his costs are increasing in percentage to sales he had better take steps to effect more efficient cost control.

How did you do on collections last year? On bad debts?

Take the total of accounts receivable and percentage it on sales. Is it higher or lower than prior years? If higher, review your collection system and practices. Maybe they need improvement.

You can do the same thing on collections as on inventory—freeze too much money in a fixed total that remains the same from month to month or increases so that you never liquidate this asset. As fast as you collect, other accounts of similar value take their place.

Try to keep receivables down to minimum. They will tend to increase in a war economy as money gets more abundant. If your bad debts have increased in proportion to credit sales, then stiffen your credit investigations and credit-granting practices. You are passing out too much credit to poor risks.

Do you utilize ample auxiliary records to enable you to get the business facts you need in order to conduct operations with maximum efficiency?

The financial accounts showing income and outgo are needed to give you the monetary totals that enable you to pay bills promptly, to give you accurate totals on sales, expenses, assets and liabilities—BUT that is all they can do.

If you are not making enough money on the jobs you install or the repairs and service work you do, you can compute the loss by means of your financial accounts, but you can't determine the reason for the loss.

This is as important as knowing how much you lost—because if you can't determine the reason, you'll continue to lose money. Therefore, you need special costing forms to tell you how much you earned or lost on each installation and service job.

Quite obviously, if the profit per job is slim, or if there is a loss instead of a profit, this will show up on the operating statement. When the dealer determines the reason behind his unsatisfactory operating net, he will be in a position to proceed intelligently in the application of the necessary correctives.

Do you keep stock control records showing the movement of stock from supplier to you and from you to the job or the over-the-counter customer? With materials cost going up, stock control records are needed more than ever these days to minimize loss on inventory, which runs high where stock control is lax.

Cost Trucks Separately

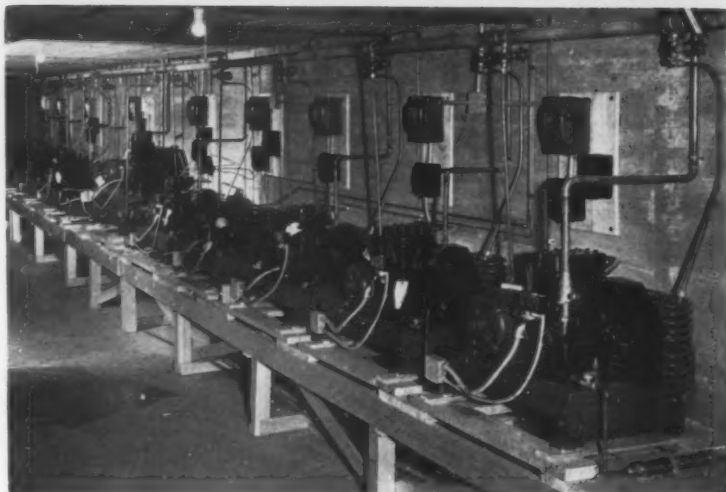
If you operate more than one truck, you should have truck costing records to help you determine when the maintenance per truck is increasing unduly so that you can authorize an overhaul or trade in the old truck for a new one. If our war economy becomes more acute, it may be hard to get new rolling stock, but this does not negate the desirability of costing each truck separately.

Some operators in this field who use considerable mechanized equipment charge off depreciation on a composite basis—a flat rate on the total value of the fixed assets, trucks, servicing equipment, fixtures, etc. They should keep complete depreciation schedules, with a separate record for each unit or group of similar units. Otherwise, they may charge off too little or too much depreciation.

In both instances, they will lose money, either by short-costing their sales or by being penalized by the Treasury for paying too low a tax. The depreciation schedule assures reasonable accuracy on the depreciation charge-offs and provides experience figures upon which to base charge-offs in the future.

Depreciation, at best, is an esti-

New Kroger Market Is Curtis Equipped



A battery of 11 Curtis water-cooled compressors keeps refrigeration conditions under control at the new Kroger supermarket in Clayton, Mo.

mate. That is why it gives the taxpayer and Treasury so much trouble. The dealer can minimize discrepancies and losses on this internal expense with depreciation schedules that list the cost of the unit, the estimated life-span, the depreciation rate charged off annually, the unrecovered cost (which is the original cost less the charge-offs to date), and any other data that seems relevant.

Finally, do not include income taxation when appraising business operations. Review your tax expense separately at the end of the year to determine where savings may have been effected, and use this information to guide you in supervising tax expense more economically during the ensuing twelve months.

When you have reviewed your business figures for the current year, when you have gone behind these figures to determine why certain items on the profit and loss statement or balance sheet were high or low, then you are in a preferred position to preview your operations for the year to come.

C. H. WHEELER MERGES WITH OHIO COMPANIES

Merger of C. H. Wheeler Mfg. Co., Philadelphia, and Economy Pumps, Inc. and Klipfel Valves, Inc., both of Hamilton, Ohio, has been announced recently. No present changes in personnel or operation of the companies is planned.

A self-service meat department consisting of 66 feet of self-serve meat cases and 14 fish and poultry cases are two of the basic reasons for the popularity of Kroger's new supermarket in Clayton, Mo., suburb of St. Louis.

All commercial refrigeration and air conditioning is supplied by Curtis equipment. There are 11 Curtis condensing units ranging from 1/3 through 3 hp to handle refrigeration. Five 5-ton Curtis packaged units supply cool fresh air for the store proper, with one 5-ton unit handling the room in which meat is processed for the self-service cases.

Customers readily took to the idea of getting their meat purchases without the usual waiting period, it is reported. Displays that contain complete selections of ready-to-serve cellophane packaged meats not only bring about purchase of a complete list of items on the shopping list, but encourage impulse buying of specials and other items.

Handling of meat in the air-conditioned preparation room is conducted on a mass production basis possible only with the self-serve operation. Not only is the meat handled faster, but operating conditions feature a higher degree of sanitation than with previous methods, it is claimed.

**BUY FROM YOUR
REFRIGERATION WHOLESALER**

USEFUL

BULLETINS • BOOKLETS • CATALOGS

The publications listed below are available to readers without charge. Simply circle on the postcard in this issue the key numbers of the items you wish to receive. Your requests will be forwarded directly to the companies concerned.

Replacement Seals . . . This complete stock list of Rotary seal replacement units for refrigeration compressors just published by Rotary Seal Co. lists shaft size, stock number, and list price of seals for virtually every make of compressor. General handling instructions for these seals also is included.

Circle No. 100 on Reader Service Card

Volt Ammeter . . . "How to Make Your Job Easier with the Amprobe" is the title of this informative 16-page booklet (Manual No. 110) describing and illustrating with cartoon-type sketches the purpose and use of this pocket-size, snap-on volt ammeter. Available from Pyramid Instrument Corp.

Circle No. 101 on Reader Service Card

Replacement Valve Plates . . . A specification chart illustrating and identifying a line of replacement valve plates and component parts for single, twin, and 4-cylinder Chieftain refrigeration compressors. Available from Delavan Mfg. Co.

Circle No. 102 on Reader Service Card

Valves and Fittings . . . A new 24-page catalog (R-4) has just been released by Superior Valve & Fittings Co. covering its complete line of refrigeration and air conditioning valves, fittings, and accessories. Each item is illustrated and details such as size, dimension, end connections, price and weight are given.

Circle No. 103 on Reader Service Card

Multi-Stage Refrigeration . . . A discussion of multi-stage refrigeration for low temperature applications is featured in this informative new bulletin (No. 017) just published by Vilter Mfg. Co. to outline some 20 features engineered into its line of multi-cylinder high speed Freon and ammonia compressors. Application of these compressors, adapted for use with ammonia, to high stage or booster refrigeration service is described and diagrammed.

Circle No. 104 on Reader Service Card

Condensers . . . Use of "Unicon" self-contained remote type air cooled condensers as a means of eliminating hot compressor rooms, providing more capacity, saving water, or supplementing water cooled condensers is outlined in Bulletin U-177 available from Kramer Trenton Co. Actual

examples are worked out to show proper application. Technical data includes performance, dimensional, and selection charts, along with tables of conversion and correction factors.

Circle No. 105 on Reader Service Card

Temperature Indicators . . . Typical applications of "Microsen" temperature indicators and recorders are tabulated in a new bulletin (404) issued by Manning, Maxwell & Moore, Inc. A schematic diagram showing the operation of these thermocouple actuated instruments.

Circle No. 106 on Reader Service Card

Meat Equipment . . . A complete line of equipment and supplies for all branches of the meat industry is included in Catalog No. 75 issued by Koch Supplies. If you are looking for any accessory equipment to sell to meat packers, meat processors, or locker plants, this 68-page catalog should prove of value to you.

Circle No. 107 on Reader Service Card

Transparent Lids . . . This descriptive circular (No. 1050) gives all the details on the line of transparent lids for new or old ice cream cabinets produced by R. K. Merritt & Associates. Various models are illustrated and specifications are listed.

Circle No. 108 on Reader Service Card

Hand Torches . . . A 36-page illustrated catalog (ADC-702) containing detailed information on the Airco line of welding torches and accessories. Extensive charts show correlation of tip, mixer, extension and torch. Welding and cutting pressure charts make this catalog a valuable reference book. Available from Air Reduction.

Circle No. 109 on Reader Service Card

Water Cooling . . . A reference manual on water cooling for food service applications, this 12-page booklet presents in non-technical terms the important factors to be considered in providing "water conditioning" service for all types of food service establishments. Complete product and application information on the line of equipment produced by Filtrine Mfg. Co. also is included. Sample sets of specifications for various water cooling systems are another feature.

Circle No. 110 on Reader Service Card

Processing Pumps . . . A full line of pumps for handling corrosive and non-corrosive liquids, solids-carrying liquids, and dry and semi-dry materials is presented in a new condensed catalog issued by Yeomans Bros. Co. Each type of pump is illustrated and selection information is presented.

Circle No. 111 on Reader Service Card

Dairy Instruments . . . Complete line of "Tag" recording instruments for the dairy industries is illustrated in Catalog 1140 just published by Tagliabue Instruments Div., Weston Electrical Instruments Corp. Specifications and performance details of recording thermometers and pressure gages are given, along with descriptive listings of related equipment.

Circle No. 112 on Reader Service Card

BOOK REVIEW

Title: How To Tell If Your Ads Will Sell.

Author: Calvert Lindquest, advertising and sales psychologist.

Publisher: Helpful Press, Omaha, Neb.

Price: \$5.00.

Described as "a manual for the man who often may be his own ad manager, writes his own copy sometimes, and pays the bills always", this little book outlines what is called the "Profit-Ad System" for aiding small businessmen in determining the pulling power of their ads before they are printed.

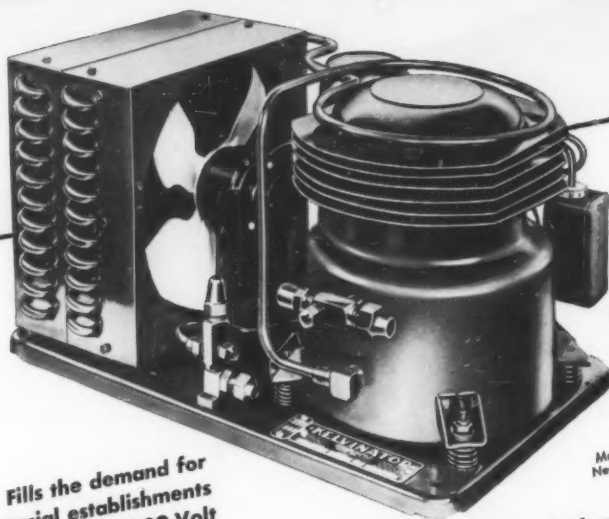
The System includes an "automatic satisfaction finder" to tell the strongest appeal of any product or service. It also features three separate methods for pre-checking ads. In use, an advertiser matches his ad against the System rules. Plenty of examples, illustrations, and sample ratings make this check easy.

Other claims for the System are that it will help write copy faster, check copy written by others, give beginners a professional method of ad writing, and make for quality control right in the office of the advertiser. Copy efficiency is the feature of the System but illustration, layout, and typography also are rated.

JENNINGS WINS AWARD AT ASME MEETING

Burgess H. Jennings, Northwestern University professor and former president of American Society of Refrigerating Engineers, was awarded the 1950 Richards Memorial Award for outstanding achievement in mechanical engineering at the recent annual meeting of American Society of Mechanical Engineers, in New York City.

BIG *in demand...* BIG *in reasons why!*

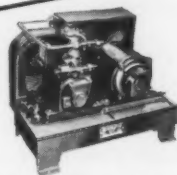


Fills the demand for commercial establishments and farms where 230 Volt current is not available.

Want to build repeat business... on a rock-solid basis? Sell Kelvinator and be sure of a satisfied customer every time! Look at Kelvinator's wide range of twelve, hermetic-type condensing units in sizes up to and including 1/2 H.P. Each is precision-planned, precision-built, precision-tested to Kelvinator's rigid standards of accuracy. Each is competi-

tively priced and bears the name that means top-quality to users everywhere. Demand Kelvinator for your next job. Repeat business will prove your choice! Prompt delivery on all models. Just call your nearest Kelvinator Distributor or Zone Office. Kelvinator, Division of Nash-Kelvinator Corporation, Detroit 32, Mich.

Model illus.
New 6D2CRA



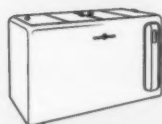
Kelvinator also makes available to you 15 open-type condensing units.

Model illus., O-150—air cooled 1 1/2 H.P.

PROFIT TODAY...BUILD FOR TOMORROW WITH

Kelvinator

THE NAME THAT SELLS...THE NAME THAT SATISFIES!



KELVINATOR
BEVERAGE COOLERS



KELVINATOR FROZEN
FOOD MERCHANDISERS



KELVINATOR
WATER COOLERS



KELVINATOR
ICE CREAM CABINETS



KELVINATOR
AIR DRIER

Circle No. 33 on Reader Service Card for more information
and **AIR CONDITIONING • JANUARY, 1951**

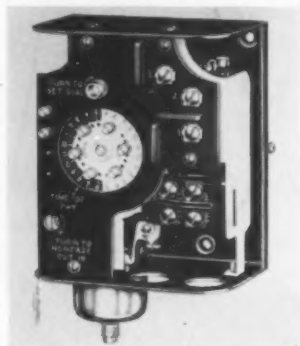
NEW

PRODUCTS

For further information on any of these products, simply circle on the postcard provided in this issue the key numbers of the items in which you are interested. Your requests will be forwarded directly to the companies concerned.

Self Serve Control

Product: Completely automatic control (Type 235 T-P Defroster) for defrosting evaporators on pre-packaged meat cases, reach-in boxes,



and similar applications in the 24 to 35 F band and higher.

Manufacturer: Penn Electric Switch Co., Goshen, Ind.

Features: Shuts down refrigeration compressor at preselected time intervals by means of synchronous self-starting timer motor. Compressor is started again by rising back pressure at a point corresponding with a completely defrosted condition of evaporator coils. "Off" period is completely self-adjusted, depending upon frost condition of coils and not upon timer. Defrost period varies automatically with load conditions, so no "seasonal adjustments" are necessary. Incorporates 24-hour dial and may be set to defrost one to eight times in each 24-hour period.

Circle No. 130 on Reader Service Card

Wrenches

Product: New design of combination and open-end wrenches.

Manufacturer: Bonney Forge & Tool Works, Allentown, Pa.

Features: Slim, light in weight, and well balanced to make them easier to handle and easier on the hands. Made in long and short series

with box wrench ends either single or double hex. Handles are well-rounded and smooth. Conveniently narrow heads without sacrifice in strength allows user to get into tight places. Wrench openings accurately gauged to assure firm hold on nut.

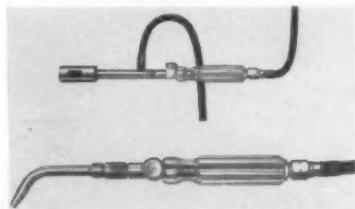
Circle No. 131 on Reader Service Card

Leak Detector Torch

Product: "Sod-R-Braze" soldering and brazing torch with an attachable refrigerant leak detector.

Manufacturer: National Cylinder Gas Co., Chicago.

Features: Burns acetylene gas and air and features a built-in pilot light. Diaphragm type valve is designed so that operator can control flame and



pilot light and turn torch on and off with the thumb of the hand holding the torch. Six tips, all with individual gas and air mixers, permit wide range of work. Regulator can be adjusted from 0 to 15 pounds pressure. Leak detector has newly designed reactor unit in which two heavy copper wires are maintained at dull red heat by pilot light, making it extremely sensitive. Reactor unit can be replaced without tools in a few seconds.

Circle No. 132 on Reader Service Card

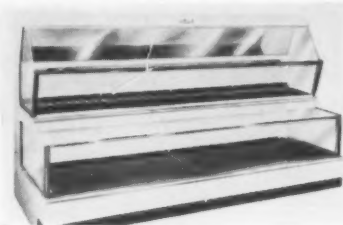
Double-Deck Merchandiser

Product: "Double-Deck" refrigerated two-deck merchandiser (Model DC2-8) for dairy products, vegetables, and fresh meat.

Manufacturer: Fogel Refrigeration

Co., Philadelphia, Pa.

Features: Refrigerated and illuminated on both decks. Offers 25 sq. ft. of merchandising display shelf. Canopy over top deck offers 14 sq. ft. of display for non-refrigerated merchandise. Manufactured in 8-foot lengths which may be joined together



for continuous display. Refrigerated by gravity coils. Air is suspended between cooling coil and glass, not blown out, so top cover is unnecessary. Full view mirror doubles display and increases visibility. Porcelain shelves designed to allow free air circulation and are removable for cleaning. Maximum visibility afforded by "side view" glass ends which can be removed when joining cases.

Circle No. 133 on Reader Service Card

Automatic Ice Maker

Product: Improved automatic ice maker which will deliver either cubes, or selected grades of crushed ice.

Manufacturer: Carrier Corp., Syracuse, N. Y.

Features: Incorporates all refine-



ments developed since introduction of the original Carrier machine. Rearrangement and design of operating parts facilitates cleaning and main-

tenance from front of unit. Use of motor with low starting current requirements permits direct hook-up with virtually all standard 115-volt electrical systems. Factory installed ice crusher available as an optional feature. Turn of knob shifts machine from delivery of ice cubes to crushed ice. Grade of ice can be controlled through a number of sizes from coarse to fine by turning another knob. Ingenious freezing arrangement forms cubes individually, 208 at a time. Capacity is rated at up to 450 pounds of ice a day.

Circle No. 134 on Reader Service Card

Liquid Indicator

Product: Two new $\frac{1}{2}$ and $\frac{5}{8}$ -in. sizes of "Liquid Eye" indicators, with protective seal cap.

Manufacturer: Allin Mfg. Co., Chicago, Ill.

Features: Protective cap posi-



tioned on tubular brass body and knurled for easy unfastening and sliding back to view liquid condition or sliding forward and screwing in place to seal off the ports. Because of unique construction, seal cap cannot be lost or misplaced. Guards against all possibility of damage to glass tube after installation. Minimize pressure drop by utilizing a larger diameter pyrex tubing which insures a full flow of refrigerant.

Circle No. 135 on Reader Service Card

Home Freezer

Product: Compact "Quickfrez" home freezers.

Manufacturer: Sanitary Refrigerator Co., Fond du Lac, Wis.



Features: Use of high density insulation makes possible greater storage space in smaller cabinets and more efficient temperature control. Space used for compressor units also has been lessened. Available in 12 $\frac{1}{2}$ and 16-cu. ft. sizes. Each model has two compartments, the larger for storing food and the smaller for freezing it. Separators and baskets make food easily handled.

Circle No. 136 on Reader Service Card

BUY FROM YOUR REFRIGERATION WHOLESALE

Fastening Tool

Product: "Dual Action" powder-actuated fastening tool.

Manufacturer: Ramset Fasteners, Inc., Cleveland, Ohio.

Features: Offers choice of either "turn" or "tap" operation, depending upon working conditions. Use of tap operation shortens tool by nearly 3 inches. Operator simply inserts a Ramset fastener and powder load in the tool, places it against the work, and rams. The drive pin or threaded stud is seated instantly in concrete, steel, masonry, or other building ma-

LOOK TWICE!



D-502-SC

COMPARE

Then promote and sell **STERLING Profit Maker Open Self-Service Display!**

Your food market customers compare, you know. That's why they're quick to recognize the merits of the **STERLING Profit Maker**, with famous "Perfectionaire" Cooling System and mirrored super-structure. Comparison proves the Profit Maker, with its low operating cost, is the best Dairy Case on the market today!

WRITE FOR COMPLETE CATALOG

MINNEAPOLIS SHOW CASE AND FIXTURE COMPANY • New Richmond, Wisconsin



Circle No. 34 on Reader Service Card for more information

terials. Tool can be cleaned in about 5 minutes and is disassembled with one Allen wrench. Engineering control makes it impossible to operate at angles greater than 15 degrees between shield and work surface.

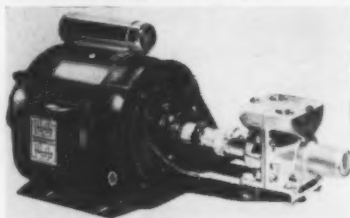
Circle No. 137 on Reader Service Card

Circulating Pump

Product: Bronze gearless pump in two sizes for air conditioning industry.

Manufacturer: Eco Engineering Co., Newark, N. J.

Features: The PP-1M is especially suited for 1-ton cooling tower work, delivering 4 gpm at 40 psi at 1800



rpm at .257 bhp. The larger pump of the same construction will deliver

10 gpm against a 40-lb. head at .363 bhp. This pump is adaptable to a 2-ton job or even for 3 tons where $3\frac{1}{3}$ gpm will take care of the load. Where pump is circulating condensing water through compressor and an automatic water valve is used in the line, resulting in either a closed or partly open water line, a built-in by-pass may be furnished as an integral part of the pump.

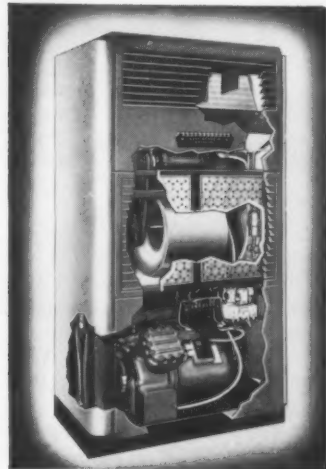
Circle No. 138 on Reader Service Card

Air Conditioner

Product: Improved "Unitaire" self-contained air conditioner.

Manufacturer: Westinghouse Electric Corp., Hyde Park, Mass.

Features: Year around air conditioning can be provided by an addition of either steam or water heating



coils and an outside air duct connection for ventilation air supply. Factory assembled conditioner is complete in one package with hermetically sealed compressor, water cooled condenser, direct expansion coil, and fan. Requires only water, drain, and electrical connections. Comes in three sizes—2, 3, and 5-hp, with cooling capacities of 24,000, 36,000 and 60,000 Btu per hour respectively.

Circle No. 139 on Reader Service Card

Motor Starting Capacitor

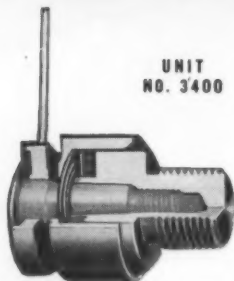
Product: Electrolytic motor starting capacitor, (Type ETB) believed to be the smallest yet made available.

Manufacturer: Cornell-Dubilier Electric Corp., South Plainfield, N. J.

Features: Small enough to be tucked away in the motor end-bell or

ROTARY SEAL REPLACEMENT UNITS

MORE THAN
900
MODELS

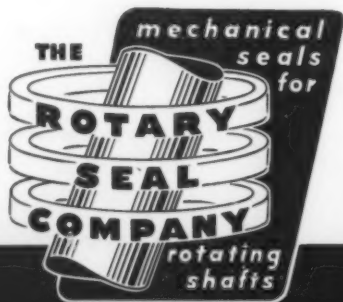


AT ALL
LEADING
JOBBER'S

are available in a complete range of sizes—including the larger models for use in Commercial and Semi-Commercial Compressors, such as:

BAKER • BRUNNER • CARRIER • CURTIS • COPELAND • FRIGIDAIRE • KELVINATOR • GENERAL ELECTRIC • MILLS • PAR • UNIVERSAL COOLER • WESTINGHOUSE

and others



"Seal with

Certainty!"

**2020 NORTH LARRABEE STREET
CHICAGO 14, ILLINOIS, U.S.A.**

CANADIAN AGENT: 2025 ADDINGTON AVENUE
MONTREAL 28, QUEBEC, CANADA

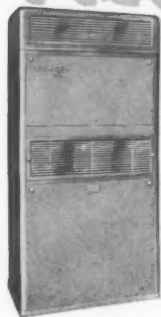
Circle No. 35 on Reader Service Card for more information

A *Curtis* Franchise IS BECOMING MORE AND **MORE PROFITABLE**

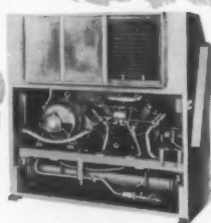
BECAUSE OF NEW ADDITIONS TO THE LINE

2, 4, 6, 8-Ton Packaged Units
10 and 15-Ton Central Type Package Units
Condensing Units — 1/4 H. P. Thru 40 H. P.

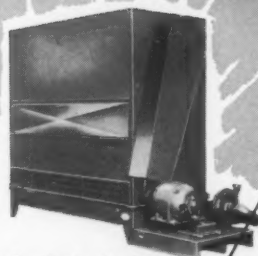
and



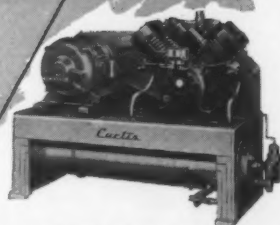
2, 4, 6, 8-Ton Packaged
Air-Conditioning Units



Central Type
10 and 15 Ton



Evaporative Condensing Units,
Cooling Towers and Air
Handling Units



Water Cooled Condensing Units
1/4 H.P. thru 40 H.P.

Distributors have long known of the unsurpassed quality and performance record of Curtis equipment. Now, because of the strong continued National Advertising Campaign, users of air conditioning are asking for Curtis. They know it as a quality product.

This broad line permits Curtis distributors to handle air-conditioning jobs profitably.

Powerful National ADVERTISING

FULL PAGES IN

*Saturday
Evening Post*

Time
and many other publications

Newsweek



97 Years of Successful
Manufacturing

Curtis

CURTIS REFRIGERATING MACHINE DIVISION
of Curtis Manufacturing Company

1915 Kienlen Ave.

St. Louis 20, Missouri

R90-6

Circle No. 36 on Reader Service Card for more information

1 1/8 in. in diameter and 2 5/8 in. in length. The insulating tube adds 1/16 in. in diameter and 3/16 in. in length. Will operate on 110 volts, 60 cycles intermittently and is rated at a maximum of 60 1-second starts per hour. Also used for low-voltage sub-fractional capacity start, capacity run motors where operation is intermittent and where the voltage across the capacitor does not exceed 45 volts.
Circle No. 140 on Reader Service Card

Dairy Case

Product: "Dairi-Aide" ice refrigerated case designed primarily for



the dairy industry.

Manufacturer: McIntyre Engi-

neering Co., San Francisco, Calif.

Features: Fitted with convenient wire baskets in which can be stored butter, cheese, cream, and various products which are liable to damage from either extreme heat or cold. Water-tight cans provide for ice storage and remove possibility of water damage to paper containers commonly used in the dairy industry. Galvanized throughout. Heavy duty latches and hardware.

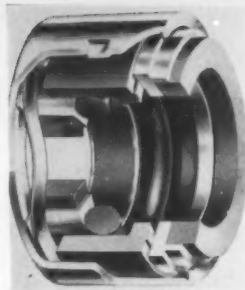
Circle No. 141 on Reader Service Card

Shaft Seal

Product: Models FCB and GCB "Sealol" mechanical balanced pressure shaft seals designed especially for pump manufacturers.

Manufacturer: Sealol Corp., Providence, R. I.

Features: All-in-one seals complete in one package, factory assembled and factory tested. Construction eliminates possibility of lost or damaged parts, faulty assembly, or contamination of precision lapped seal faces. No special machining on part of manufacturer is required when these seals are used. Rubber friction



members incorporated in the rotating and stationary elements of the seals provide the proper driving and holding actions. Design permits hand assembly of seal in pump. Press fits and special inserting tools are not required.

Circle No. 142 on Reader Service Card

Touch-Up Tool

Product: Self-contained tool for touch-up spray painting using original factory finish in a self-pressurized container.

Manufacturer: Sprayon Products, Inc., Cleveland, Ohio.

Features: Hermetically sealed, self-spraying tool without any extras

4 REASONS WHY

... It's EASIER to sell Friedrich
 ... It's MORE PROFITABLE to sell Friedrich



DD6R

All-purpose, FloatingAir equipped porcelain throughout, small floor space, big operation, amazingly low priced.

AMAZINGLY LOW-PRICED

1

Such sure-fire exclusive merchandising features as FloatingAir and Coolite.

2

67 years successful manufacturing experience.

3

Strong advertising support.

4

Complete line.

A few territories now open for **TOP-NOTCH** dealers.



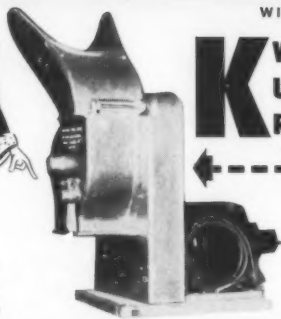
Ed Friedrich Sales Corporation
 San Antonio, Texas, Dept. CR *Bonded Representatives Everywhere*

Circle No. 37 on Reader Service Card for more information

INCREASE ICE CUBE MACHINE SALES

WITH THE

**KWIK
 UBE
 CRUSHER**



**"Adjustable from Snow to Coarse
 with a Flick of the Finger . . ."**

- Powered by 1/2 H.P., G E Motor
- Rated Capacity — 30 lbs. per min.
- Built-in Switch
- Plug-in Cord
- Sturdy Aluminum Casting
- Nickel Bronze Alloy Grinding Rotor
- Compact — 22 1/2" high, 14" wide, 17" deep
- Safety-tested
- Fully Automatic
- Sanitary



Dealers wanted throughout all territories

INTERNATIONAL PRODUCTS CORP.
 8056 MELROSE AVE. • LOS ANGELES 46, CALIF.

*Manufacturers of Draft Beer Systems and
 Stainless Steel Refrigerators and Bottle Coolers.*

Circle No. 38 on Reader Service Card for more information

and weighing less than 1 pound. Sprayon will process any lacquer or enamel and supply it in these dispensers. Tool can be operated an unlimited number of times with uniform pressure and fine mist spray pattern.

Circle No. 143 on Reader Service Card

Delicatessen Case

Product: "Sales Magnet" self-service meat and delicatessen case.

Manufacturer: Super-Cold Corp., Los Angeles, Calif.

Features: Can be loaded from rear or front, eliminating problem of



disturbing shoppers when restocking. Available with or without superstructure. When equipped with superstructure, a choice of either sliding glass panels for rear loading or "double display" mirrors for effect of mass display is offered. Brilliant, cool fluorescent lighting. Porcelain-clad front is protected from damage by stainless steel bumper rail. Designed to join in continuous in-line display without removal of case ends.

Circle No. 144 on Reader Service Card

TX Valve

Product: Entirely new type (Model 209) of thermostatic expansion valve.

Manufacturer: A-P Controls



Corp. (formerly Automatic Products Co.), Milwaukee, Wis.

Features: Offers four major features which make it unique in design and practically universal in applica-

tion. Adjustable pressure-limit setting, with range from 0 to 55 lb. per sq. in., which adapts it for use on any application where overload protection is desired. Setting is done with clearly marked adjusting knob. Simple superheat adjustment covers entire normal operating range. Both adjustments covered by moisture-tight and tamper-proof caps. Liquid charge permits valve to be used in any ambient temperature and in any position. Also allows valve to be used for any application—low temperature, commercial, or air conditioning—without change.

Circle No. 145 on Reader Service Card

Ice Cream Freezer

Product: Combination unit for storing ice cream mix as well as freezing and serving it.

Manufacturer: Sweden Freezer Mfg. Co., Seattle, Wash.

Features: Incorporates a refrigerated storage compartment below the dispensing area for convenient storage of mix, with refrigerated mix tanks above each freezing cylinder for rapid feeding of mix. Up to 24

Circle No. 39 on Reader Service Card

FOR BETTER PERFORMANCE

Insist on



HEAT TRANSFER EQUIPMENT

Recold manufactures heat transfer equipment for all applications above or below 34° F. and for every air conditioning requirement. Recold developed the well known water defrost coil and "Dri-Fan" principle in evaporative condensers and cooling towers.

Write for Information and Name of Nearest Distributor.

Refrigeration ENGINEERING, INC.

7250 E. Slauson Avenue
Los Angeles 22, Calif.

Prest-O-Lite HALIDE
Trade-Mark

Leak Detector



Quick—Always ready for use. Lights instantly. Locates exact source of leak in a few seconds. Avoids waste of refrigerant gas and costly shut-downs of equipment. An indispensable test unit for service and installation kits.

Sure—Reacts instantly to smallest concentrations of any of the non-combustible halide refrigerant gases (F-11, F-12, F-21, F-113, F-114, Carrene) commonly used in domestic or industrial systems.

Simple—Small, light, and handy. Easy to use anywhere. Durably built and dependable. No delicate parts to get out of order.

• For more details, see your jobber or write The Linde Air Products Company, 30 E. 42nd St., New York 17, N. Y. In Canada: Dominion Oxygen Company, Limited, Toronto.

"Prest-O-Lite" is a trade-mark of The Linde Air Products Company, a Unit of Union Carbide and Carbon Corporation.

Order from your local Jobber

Circle No. 40 on Reader Service Card for more information

gallons of mix can be stored in lower portion of machine. This storage cabinet has its own completely self-contained 1/6-hp hermetically sealed re-



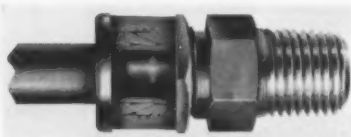
frigeration for plug-in operation. Thus mix may be stored without necessity of operating larger refrigeration system in the freezer itself. Batch-feeding portion consists of two 4-gal stainless steel refrigerated mix tanks positioned above the freezing cylinders, and a magnetic solenoid release valve for each tank to facilitate recharging of freezing cylinders

with a flip of a switch. Solenoid releases measured batch of mix.

Circle No. 146 on Reader Service Card

Fittings

Product: "Swagelok" fittings for use with heavy or thin wall tubing of



aluminum, brass, copper, steel, and plastic.

Manufacturer: Crawford Fitting Co., Cleveland, Ohio.

Features: Provides vacuum tight seal. Two ferrules and the threaded chuck inside the nut of the fitting clinch tight around the tubing wall, providing leak-proof seal. Laboratory tests have demonstrated that the tubing will burst before the fitting will leak. Save assembly time as no flaring of tubing is necessary. Fittings come completely assembled, finger tight. Simply insert tubing into nut, apply 1 1/4 turns, and the job is done.

Tubing remains stationary through tightening, so cannot be damaged by twisting.

Circle No. 147 on Reader Service Card

Soldering Gun

Product: Dual spotlight soldering gun (Model WD-135).

Manufacturer: Weller Electric Corp., Easton, Pa.

Features: Dual spotlights elimi-



nate shadows and illuminate work area clearly. Over-and-under terminals brace tip and improve visibility. Dual heat (100/135 watts) for all light soldering. 5-second heating time. Trigger switch control adjusts heat to work and eliminates need of unplugging gun between jobs.

Circle No. 148 on Reader Service Card



NEW!

REFRIGERATED DISPLAY TABLE

**Another sales opportunity
for TYLER AGENTS!**

The latest Tyler FIRST offers shopping from all 4 sides—wide open self-service! Complete, ready to use—small floor space! For all types of food stores, restaurants, hotels, taverns, florist and bakery shops, candy stores, etc. Write today. Tyler Fixture Corporation, Dept. RI-1, Niles, Michigan.

TYLER

FOR FOOD REFRIGERATION

Circle No. 41 on Reader Service Card for more information

JANUARY, 1951 • COMMERCIAL REFRIGERATION

ABOUT PEOPLE . . .

Continued from page 32

have headquarters in Franklin's St. Cloud, Minn., plant. **F. R. Jurisch**, formerly service manager for the company, has been promoted to assistant sales manager of Franklin's refrigeration division, with offices in Minneapolis.

H. B. "Bill" Vogt has been named sales manager of the national accounts division of Viking Refrigerators, Inc., Kansas City. Vogt formerly was sales manager for McCray Refrigerator Co., and also had been sales promotion manager for Hussmann Refrigeration, Inc.

Allen C. Dean has been appointed Florida representative for Acme Industries, Inc.



Dean's headquarters will be in Hollywood, Fla. Before joining Acme, he was sales manager for A. V. Cauhorn Co., a Chrysler Airtemp distributor in Detroit, and prior to that was a staff executive on the Detroit Board of Commerce. At one time he operated a public relations office in Washington, D. C., and Detroit. He will represent all Acme products and will be distributor for products in the Flow-Cold Division, carrying stocks for quick shipment to dealers in the area.

Appointment of **Walter H. Witham** as personnel manager of Baker Refrigeration Corp. South Windham, Ma., has been announced by Jack Kelly, Baker's general plant manager.

Fred J. Laughna, formerly Chicago regional manager for Airtemp Div., Chrysler Corp., has been appointed administrative assistant to the vice president, according to Chester S. Stackpole, vice president and general sales manager. **Homer D. Day**, formerly Boston regional manager, has been named manager of the Chicago region, and **Taylor U. Cowger**, formerly special repre-

sentative in the Dallas region, has been named Boston regional manager. **Ralph W. Steinbaugh** has been named St. Louis regional manager and **Jerry A. Clarke** is in charge of the Detroit region.

Mitchell Manufacturing Co., Chicago manufacturer of room air conditioners, has announced the appointment of **Howard G. Haas** as advertising and sales promotion manager. Haas was formerly assistant advertising manager for Mitchell and prior to that had been engaged in various types of magazine promotion work.

Robert R. Sammon has been promoted to manager of the Los Angeles office of Sunroc Co., water cooler manufacturer. He formerly was sales supervisor of Sunroc's New York office and has been with the company since 1946.

J. T. Farrell has been named assistant to the manager of sales of General Electric's Small and Medium Motor Divisions, reports Olaf F. Veal, manager of sales. **Howard W. Bennett** and **Paul D. Ross** have been named managers, respectively, of the new Gear-Motor and Packaged Drive Sales Division, and the Erie (Pa.) D-S Armored Motor Sales Division.

George W. Ingham has been appointed by the United States Air Conditioning Corp. as assistant to works manager of its Minneapolis plant. Ingham, formerly general superintendent in charge of air conditioning at the Worthington Pump and Machinery plant in Holyoke, Mass., will assist works manager H. J. Schorle.

R. E. Moore, vice president and secretary of Bell & Gossett Co., has been elected to the board of directors of Kropp Forge Co. Kropp Forge Co. is the world's largest job forging plant.

R. F. Attner has been appointed manager of valve distributor sales of Manning, Maxwell & Moore, Inc. Since 1945 he has been assistant to the sales manager for Hancock Valves at Watertown, Mass.

Circle No. 42 on Reader Service Card

SEE THE NEW '51 FREEZ-RITE in the February COMMERCIAL REFRIGERATION

Freez-Rite Division
BAILEY & PERKINS CO.
2869 East Grand Blvd.
DETROIT 2, MICH.

LOOK to LARKIN for Low Prices



LARKIN CEILING HUMI-TEMP

Price is only one factor in the selection of any product—especially one that has so important a task as protecting valuable perishables. Performance must come first. Quality cannot be overlooked. Durability is highly important. Larkin has all of these. And Larkin has low prices, too. Compare them and see for yourself how low they really are.

For the latest Larkin price list, see your wholesaler. If you wish, write direct to us and we shall be glad to send you one.

Manufacturers of the original Cross-Fin Coil — Humi-Temp Units — Evaporative and Air Cooled Condensers — Air Conditioning Units and Coils — Direct Expansion Water Coolers — Steel Vacuum Plate Coils — Heat Exchangers.

WATCHDOG OF THE NATION'S FOOD SUPPLY

LARKIN COILS

319 MEMORIAL DR., S.E. • ATLANTA, GA.

Circle No. 43 on Reader Service Card

CONTRACTORS . . .

Continued from page 35

Art M. Palen, of Palen Refrigeration Co., St. Paul, was re-elected treasurer; Cecil E. Kirby, of Miami Super-Cold, Inc., Miami, Fla., was named recording secretary; and Ted Rosstock, of Arcticaire Refrigeration Co., Kansas City, was named sergeant-at-arms.

Chosen to serve as directors were George Howe, Accurate Electric Refrigeration Service, Chicago; Warren W. Farr, Refrigeration Sales Corp., Cleveland; Dale J. Missimer, Pacific Refrigeration Co., Los Angeles; Harvey O. Miller, Murphy & Miller, Chicago; E. S. Matthews, E. S. Matthews, Inc., Spokane; and B. C. McCall, Lilie & McCall, Chattanooga, Tenn. Retiring president Bob Noll also will serve as a director of the association.

Committee appointments for the coming year will be announced later. Several suggestions for changes in by-laws were made, and will be submitted to the membership for formal action. B. C. McCall, membership chairman, stressed the importance of statewide organizations as an effective means of handling state legislation when desirable.

Digests of some of the talks given at the "day with the government" session will be published in future issues.

YOUNGSTOWN CODE COVERS LICENSING

A new refrigeration code adopted as part of a general revision of the Youngstown (Ohio) building code requires licensing of refrigeration contractors. Youngstown thus becomes one of the very few cities where licensing is required.

Safety requirements for refrigeration and air conditioning installations are covered in the ordinance, which adopts the ASA-B9 Safety Code for Mechanical Refrigeration.

Some amendments are expected before the code is acceptable to all concerned. The new regulation creates an examining board to examine all applicants for licenses and to suspend or revoke licenses after hearings. Membership of the board includes two licensed refrigeration contractors, a member of the Building Inspection Department of the city, a member of

the Fire Department, and a representative of large users of refrigeration equipment.

The ordinance also establishes the position of Mechanical Refrigeration Inspector. Details of the regulation will be outlined in a forthcoming issue.

The ordinance was drafted under the direction of E. C. Carlson, Westinghouse air conditioning distributor; also active was E. S. Wright, former president of RACCA, a longtime Youngstown business man and associated with code activities there since he assisted in preparing the first one back in 1929.

TAYLOR WILL HEAD N. W. OHIO GROUP

Everett E. Taylor, vice president and equipment manager of Toledo Merchandise Co., was elected president of the Refrigeration Contractors Association of Northwestern Ohio at the recent annual meeting of the organization.

Floyd I. Davison, of Davison Associates, was elected vice president; Harold Bennington, Bennington Bros., was re-elected secretary; and Fred Rudolph was chosen as sergeant-at-arms.

On the board of directors with the officers are Paul Sizer, Tracy Riches, Charles Hudson, and R. S. Weaver. Headquarters of the group is in Toledo.

2 MORE FIRMS JOIN CHICAGO CONTRACTORS

Two new members of the Refrigeration and Air Conditioning Contractors Association of Chicago are Chicago Conditionaire Co., 2969 Archer Ave. and Indoor Weather, Inc., 6525 N. Clark St. W. L. Long and L. H. Streb head Conditionaire, and O. W. Peterson and Robert T. Hansen, Indoor Weather.

AWARDED CONTRACT

Mechanical Heat & Cold Co., Detroit, has been awarded the contract to install a complete air conditioning and heating system for all customer floors of the Smith-Bridgman Co. department store in Flint, Mich. Estimated cost is \$125,000. The job will be completed for summer shopping next year.

**BUY FROM YOUR
REFRIGERATION WHOLESALER**

MEETING THE CHALLENGE . .

Continued from page 29

layout actually saves up to 30% on operating costs.

Construction of the meat and vegetable coolers includes four inches of cork insulation, while six inches of insulation surrounds the freezer. The freezer room has been equipped with automatic defrost coils. The refrigerant tubing is run in conduit under the floor.

Seven of the nine compressors for the store-wide installation are compactly arranged on a two-deck stand just outside the meat cooler. Each piece of equipment is provided with its own separate unit so that if any one item of equipment breaks down it can be serviced without affecting any of the others.

CREDIT CURB CITED AS BANKRUPTCY CAUSE

The new government credit regulations limiting contracts to 15 months and requiring 25% down payments were blamed by partners as the Pickering Refrigeration Service, Shreveport, La., filed a suit in bankruptcy in Caddo parish court.

The company claimed that their sales dropped from \$70,000 a month to \$2,000 a month as a result of the new regulations and that they had a \$54,000 merchandise inventory when the curbs went into effect.

Partners are J. L. Pickering, G. R. Pickering, Mrs. K. P. Longoria and N. M. Hyde.

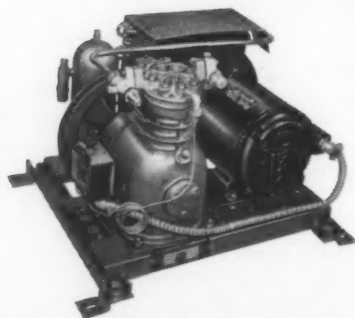
ASRE STANDARD FOR CONDITIONERS ISSUED

An ASRE Standard for testing and rating air conditioners (16R) that will be of considerable value to all manufacturers of this type of equipment has recently been issued by American Society of Refrigerating Engineers. This standard was approved by ASRE at its last annual meeting in Chicago, December 1949. It covers self-contained air conditioners, room air conditioners, remote-type air conditioners, heat pumps and oil- and gas-fired air conditioners, and consists of a revision of two former ASRE standards: No. 16, Methods of Rating and Testing Self-Contained Air Conditioning Units for Comfort Cooling (1940), and No. 13, Methods of Rating and Testing Air Conditioning Equipment (1936).

MILLS CONDENSING UNITS LARGE and SMALL CAPACITIES



Model 1000-W: Mills big sturdy-duty 10 h.p. Water Cooled Condensing Unit. A giant for service.



Model 25-C: Mills small 1/4 h.p. Air Cooled Unit. Widely used for a variety of requirements. Dependable long-life construction.

All Provide Same Reliability and Long-Life Economy

Chosen again and again for their long-life dependability, Mills Compressors and Condensing Units, from the 10 h.p. down to the 1/4 h.p. capacity, give you a range to meet the big majority of all refrigerating and air conditioning requirements.

You'll find no skimping—no over-rating. Because of proven performance, experienced engineers and service men know they can count on Mills Units long-life performance. They cost less per year!

MILLS INDUSTRIES, Incorporated
4100 Fullerton Ave. • Chicago 39, Illinois



Write for 60-page
Bulletin 204-1

MILLS CONDENSING UNITS

CAPACITIES FROM 10 H. P. DOWN TO 1/4 H. P.



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and AIR CONDITIONING • JANUARY, 1951

WEST COAST SHOW . . .

Continued from page 33

ment Manufacturers Association in its current series, will be held at Dallas, Tex., on Jan. 26, 27, and 28, 1951.

Educational talks by leading experts in the field of refrigeration dealing with everyday problems highlighted the Long Beach program, which also included motion pictures and illustrated lectures.

A question and answer panel dis-

cussion started off each day's speaking program. Subjects and speakers on the program included the following:

"Approved by Underwriters"—motion picture and talk, H. G. Ufer, western superintendent, Underwriters Laboratories.

"Trends in Education for the Refrigeration Field," Karl O. Werwath, president, National Council of Technical Schools and president of Milwaukee School of Engineering.

"Safety in Refrigeration Work," George J. Schulz, Sr., chairman, In-

ternational RSES Safety Committee.

"Basic Compressor Design, Open and Closed Types," John Zant, district manager, Copeland Refrigeration Corp.

"Removing Moisture from Refrigerating Systems in the Field," Frank Y. Carter, chief sales engineer, Detroit Lubricator Co.

"New Types and Problems Involved on Open Self-Service Refrigeration Equipment," John H. Spence, service manager, Hussmann Refrigeration, Inc.

"Selection and Adjustment of Controls for Small Air Conditioning Systems," D. D. Wile, chief engineer, Refrigeration Engineering, Inc.

"Automatic Hot Gas Defrost Systems," S. C. Segal, chief engineer, Kramer Trenton Co.

"Two-Way Radio for Service Trucks," demonstration of operation and use, Gene Gobel, sales engineer, Communications Div., Motorola, Inc.

Educational displays were furnished by the following firms in the refrigeration and air conditioning industry:

Acme Industries, Inc.; Airserco Mfg. Co.; Alco Valve Co.; Aminco Refrigeration Products Co.; Ansul Chemical Co.; Automatic Products Co.; Brunner Mfg. Co.; Bundy Tubing Co.; Bush Mfg. Co.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Refrigerating Machine Div., Curtis Mfg. Co.

Davison Chemical Corp.; Dayton Rubber Co.; Dean Products, Inc.; Detroit Lubricator Co.; Drayer-Hanson, Inc.; Elco Mfg. Co.; Electric Auto-Lite Co.; Frigidaire Sales Corp.; Fogel Refrigerator Co.; Gates Rubber Co.; General Controls Co.; General Electric Co., Air Conditioning Dept.; Halstead & Mitchell; Handy and Harman; Heat-X-Changer Co., Inc.; Henry Valve Co.

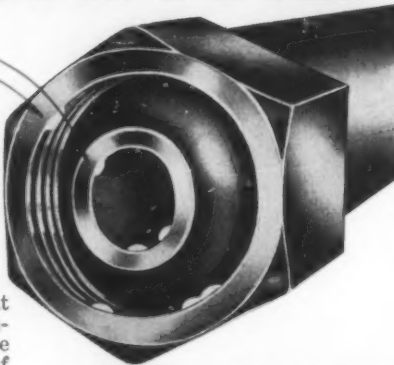
Imperial Brass Mfg. Co.; Jarrow Products; Kerotest Mfg. Co.; Kold-Hold Mfg. Co.; Kramer Trenton Co.; Larkin Coils, Inc.; Linde Air Products Co.; Lehigh Mfg. Co.; Loudon Mfg. & Sales, Inc.; Lynch Corp.; Jas. P. Marsh Corp.; McQuay, Inc.; Mueller Brass Co.

Nash-Kelvinator Corp.; Pacific Lumber Co.; Paragon Electric Co.; Penn Electric Switch Co.; Philco Corp.; Ranco, Inc.; Redmond Co. of California, Inc.; Refrigeration Engineering, Inc.; Remco, Inc.; Resistoflex Corp.

Servel, Inc.; Sherer-Gillett Co.; Sporan Valve Co.; Swift Mfg. Co., Inc.; Superior Valve & Fittings Co.; Tecumseh Products Co.; Tyler Fixture Corp.; Universal Cooler Div.; Virginia Smelting Co.; Wagner Electric Corp.; Wolverine Tube Div.; White-Rodgers Electric Co.

THE ONLY WAY YOU CAN REACH THIS MOISTURE

An exaggerated view of tubing and fitting, showing moisture clinging to walls, pores and imperfections.



It is a well-known fact that moisture clings to metal surfaces. This is true whether the metal is cast, drawn, forged, turned or rolled. That means there are likely to be hundreds of tiny droplets of moisture clinging to the inner surfaces of any refrigerating unit. Tubing walls are no exception. When some of this "clinging moisture" breaks loose, it is likely to cause trouble.

The Way to Cut Down 7-Day Callbacks

You are often unjustly blamed when some "clinging moisture" breaks loose soon after your service call. The best way to avoid these costly call-backs is to remove the moisture from all parts of the unit.

Unlike other methods, the liquid drier Thawzone reaches the entire unit. No matter where the moisture is, Thawzone finds it. Wherever water goes, Thawzone goes, too. Furthermore, it is the only

product that actually destroys moisture. It is the sure way to clear up moisture trouble for today, tomorrow and next month.

Use Thawzone in Any Freon or Methyl Unit

Thawzone can be used in any unit containing "Freon" methyl chloride, methylene chloride, "Carrene" or isobutane. Use 1 teaspoonful ($\frac{1}{8}$ oz.) per pound of refrigerant. Use half as much in hermetic units. Your wholesaler has Thawzone. Highside Chemicals Co., Clifton, N. J.

THAWZONE®

The Only Drier That
Destroys Water . . .
and Reaches All of it

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SIMPSON ELECTRIC OPENS FIFTH FACTORY

Simpson Electric Co., Chicago, has leased a new plant at 932 Benton St., Aurora, Ill., formerly tenanted by Elgin National Watch Co. and containing 31,000 sq. ft. of floor space.



**Did YOU send
for your copy?**

**IT TELLS
HOW TO
BRAZE
PIPE and
TUBING**

**INSTRUCTIONS FOR BRAZING FITTINGS
TO PIPE AND TUBING
WITH EASY-FLO and SIL-FOS**

LOW-TEMPERATURE SILVER ALLOY BRAZING WITH EASY-FLO or SIL-FOS is extensively used for joining pipe and tubing. It makes assemblies that are strong, permanently leak-tight and maintenance-free, and is an extremely simple, low-cost process. Anyone who knows how to use an oxyacetylene torch can quickly become proficient. It is merely a matter of following the correct procedure as covered by the INSTRUCTIONS in this bulletin. These instructions apply to the brazing of fittings to both pipe and tubing. For simplification, only the word "pipe" is used. The procedure is exactly the same when brazing with EASY-FLO or with SIL-FOS.

PREPARATION

1. CUTTING AND FITTING

1. Cut pipe to length. Make sure ends are cut square. Use of a square and sawing vice or pipe cutter is recommended. Fig. 1.

2. Remove burrs with a reamer or half round file.

3. Try pipe end in the fitting to be sure it has the proper close fit. Clearance should not be more than .005".

4. Clearance should be uniform all around. Where necessary, round out pipe with a filing tool. Fig. 2. For testing the outside of steel pipe use a standard Ridge Armstrong or Beaver threading tool with cutting jaws. Fig. 3.

5. Scribe a line on pipe at a distance from the cut end equal to the depth of fitting socket, plus 1". This line serves as a check to make sure pipe is inserted full depth when assembled in the fitting. Fig. 4.

2. CLEANING

Surfaces to be joined must be free of oil, grease, rust or oxides. Clean them as follows:—

1. Practically all fittings have a coating of oil or grease. The liberal application of carbon tetrachloride with a brush is an effective method of grease removal.

2. Clean socket of fitting and end of pipe thoroughly with emery cloth to remove rust and oxides. Figs. 5 and 6.

3. Do not handle surfaces after cleaning.



■ Here in clear, concise form is the step-by-step procedure for joining ferrous and non-ferrous pipe and tubing with the fast, reliable, economical low-temperature silver brazing alloys EASY-FLO and SIL-FOS. It tells how to — cut and fit — clean — flux — support assemblies — heat and flow the alloys — clean after brazing. Write for a copy now. Ask for BULLETIN 17.



HANDY & HARMAN

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COMMERCIAL *Refrigerator* SALES NEWS

Complete Planning Service Called Key to Volume Sales

By Russ Maintain
Maintain Store Engineering Service

REFRIGERATOR dealers who sell non-refrigerated display equipment and who plan complete stores, sell many times more refrigerated equipment than dealers who sell merely cases!

This is the consensus of what many leading men in the refrigeration sales field have told me. Our own observation and experience over the past 18 years has certainly proved it true to us.

Although we have been selling refrigerated display cases for only 5 years, last year we sold well over a quarter of a million dollars worth of cases—in a radius of not over 15 miles from Boston, and to independent merchants only.

At the same time we sold well over a third of a million dollars worth of non-refrigerated display equipment in a radius of less than 50 miles from Boston.

Sell Complete Fixture Line

I should like to emphasize that the above opening statement specifically states, "... non-refrigerated display equipment..." it does not say, "a complete line of store fixtures." We sell only display equipment:—commercial refrigerated display equipment and components, and also non-refrigerated display equipment and components, including canopy lighting which is an adjunct of the wall and center island shelving; also dry produce display stands, end display stands, checkout counters, and specialized departmental display equipment. Ninety-eight per cent of our business is in the above items. We have tried at various times to add other types of equipment to our line, but invariably found that interfered with and cut down the sale of our main line.

You can't be a specialist in everything. We discovered many years ago that you can't be a jack-of-all-trades and make a decent living.

The opening statement also said, "... who plan complete stores..."; merely putting new display equipment into a store to replace the old provides little

A condensation of an address at the fourth annual convention of the National Commercial Refrigerator Sales Association, New York City, Oct. 16, 1950.

benefit to the merchant. The maximum benefits to the merchant are realized only when his store is correctly planned and equipped so that it compares favorably with the most modern stores nationally—those that make the most money, consistently, for their owners.

A modern outstanding store is a store that does as nearly as possible 100% of everything that can be done to build sales and cut costs. Knowing what constitutes 100% of everything that can be done to build sales and cut costs requires a knowledge not only of what is going on in retail distribution nation-wide today, but also what is being planned by the leaders in retailing for tomorrow.

Independents Are Best Prospects

Then it requires the sales ability to influence hard-headed, individualistic, stubborn, though successful, merchants to accept your recommendations and to act on them—through giving you an order to supply the necessary services and equipment—at a price which will enable you and your organization to make a decent living and to grow.

The big chain store organizations of the country as a general rule, do not turn to local refrigerator dealers for counsel in store planning. They don't have to do that because they have on their own staffs full time experts, who have spent years of their lives studying the new developments and trends in every phase of retailing:—store appearance and atmosphere—arrangement—merchandising—display—equipment.

But the independent merchants and multiple operators of the country either have to become store planning experts themselves, at great expense in time and money, or else they must turn to the best available sources of information and experience for their store planning counsel.

We have tried to fill that need for independent merchants. We realize there are many others around the country who have endeavored to do the same thing, earnestly and honestly; but there are many refrigerator concerns who promise much and provide little in the way of genuine, dependable store planning advice.

We have found that when one man plans

a complete store for the merchant and guides him through the entire modernization program, the merchant is willing to pay well—considerably more than he would pay if he bought individual items of equipment from many different dealers. We have also found that merchants who follow this practice gain tremendously greater benefits in the way of increased profits. But "free" plans are a dime a dozen and not worth it.

Fifty per cent of the retail business of the country is concentrated in the hands of 400 retailers. What these 400 retailers do and are doing will determine the fate of a million independent retailers in this country.

Refrigerator dealers who are going to make the most progress in the future will familiarize themselves with the techniques of these 400 retailers. They will make themselves modern store planning specialists.

Who is going to do the store fixture business in the future?

A month ago, I spent five intensive days as a member of the "teaching team" at the first "Store Engineering Clinic." There were 50 store engineers attending this clinic, from 22 states. It may be significant that

A RATHER unusual application of an open-type dairy display case for use in a restaurant kitchen was made recently by A. G. Refrigeration Sales & Service, Chicago.

The case is used for storage, in open jars or crocks, of all materials needed for salads. A one-foot wooden shelf has been installed on the front of the cabinet, and the chef uses it to line up ready-made salads for quick pick-up by the waiters.

The restaurant is well pleased with the installation, officials of A. G. Refrigeration say, because it enables the chef to prepare the salads in his spare time with the assurance that they will be fresh, crisp and attractive when placed before the customers.

only two of those in the class were from refrigerator sales organizations. All the rest were from wholesale grocers, or from associations connected with wholesale grocers. It is also notable and maybe ominous that this first Store Engineering Clinic should be under the auspices of a wholesale grocers organization, and not under the auspices of equipment people.

I understand that more than three quarters of the wholesale grocers of the country today sell store display equipment of some kind. Wholesalers have told me that they have been approached by almost every refrigerator manufacturer in the country of any consequence with a proposition by which they could sell refrigerated display cases at less than or very little bit more than 10% above the dealer cost. I have seen grocery wholesalers' advertisements offering refrigerated display equipment at 40% off the list price, yet it costs the average refrigeration dealer over 20% of his selling price to do business. Some wholesalers who are acquainted with this fact, use it as a sales argument to their

customers to get the business for themselves.

Maybe the sale of display equipment is trending away from refrigerator dealers toward wholesale grocery channels. Maybe this is as it should be. The ultimate channel of distribution will be that channel of distribution which renders the greatest service to the retailer at the lowest cost.

Wholesale grocers complain that, in general, refrigeration dealers will not work with them at a reasonable margin, and that they are, therefore, forced into the equipment business themselves. Wholesaler-dealer relationships at the present time are far from satisfactory. Instead of their interests being antagonistic, perhaps closer exploration may find their true interests to be mutual.

We will do better to seek ways of keeping wholesale grocers—proving to them that we are better equipped to plan, equip and service retail stores than are they.

NCRSA PUBLISHES ROSTER OF MEMBERS

The National Commercial Refrigerator Sales Association has just published a membership directory listing the distributors and manufacturers of commercial refrigeration equipment which are affiliated with the organization.

This directory lists not only the executive personnel of each organization, but also indicates the types of products handled and the manufacturers represented by each firm.

Anyone in the industry interested in such a directory may obtain a copy by writing on company letterhead to National Commercial Refrigeration Sales Association, 1900 Arch St., Philadelphia 3, Pa.

PAY

HOME UNITS HIGH ON "WANTED" LIST

5.7% of the subscribers returning questionnaires sent out by *Household* magazine in a recent survey reported that their next major purchase would be a mechanical refrigerator; and 4.1% planned to make their next major purchase a food freezer.

New automobiles led in popularity in the "next major purchase" class, 9.5% of the families reporting saying a car would be their first investment. 82.3% of reporting families owned an electric refrigerator, and 13% said they bought it in 1949. 11.2% were owners of freezers, with the average size owned being 12 cu. ft.

**BUY FROM YOUR
REFRIGERATION WHOLESALER**

Supply Problems Discussed By REMA-REWA Panel

Editor's Note: A panel discussion during the recent REMA-REWA meeting in White Sulphur Springs, W. Va., included opinions of industry leaders on some of the materials supply problems currently confronting the refrigeration and air conditioning field. A condensation of the principal topics discussed at this panel session appears below.

Refrigeration Fittings

Question: While fitting manufacturers recommend refrigeration "heavy-weight" fittings for refrigeration work the market is flooded with lightweight fittings. What is your suggestion for overcoming the difference in weight and the price differential?

Answer: The refrigeration fittings are not only heavy in weight but they also have a dryseal thread. The refrigeration fittings therefore have much closer tolerances and give you a metal to metal contact, whereas the lightweight automotive fittings always have some air space between the threads and require the use of caulking the threads. Refrigeration fittings give you a better, safer job, and the difference in the cost of the fittings is only a few cents.

Freon

Question: What will the future of the Freon situation be next spring? Will there be an increase or decrease in the supply?

Answer (by an official of Kinetic Chemicals): We have adequate production capacity. We are now producing about 70% of capacity because of shortage of material. This was caused by strikes due to a threat of a fourth round wage increase, a threat of credit restriction, etc. We have two choices (1) to let orders accumulate, or (2) to go on controlled distribution. Our production is ahead of last year. In September, 59% ahead of last year. In October, 60% of last year. In November, 56% ahead of last year.

In December it will be necessary to cut back on shipments. We are now shipping all we can produce.

Question: Have you had very many jobs or actual cases where they have been closed down or are not running due to a lack of Freon?

Answer: We know of no cases where equipment is being closed down or is not running because of lack of Freon.

Industry Essentiality

Question: What concerted effort has been made by the industry to sell Washington on the necessity of the refrigeration industry?

Answer: Several preliminary meetings have been held in Washington. The industry associations have been asked by NPA to recommend members of a Commercial and Industrial Refrigeration Industry Advisory Committee. It probably will be composed of representatives of ACRMA, REMA, CRMA, RSES, RACCA, REWA, NCRSA and SFMA. In addition to this, a brochure is being prepared for distribution to government agencies and users of refrigeration and air conditioning equipment. It will tell the story of the importance of commercial and industrial refrigeration in all its ramifications.

Copper

Question: What are the causes of the shortage of copper?

Answer: Strikes were largely responsible for the shortage. . . . strikes within the mines, strikes at the smelters, and also strikes of transportation. During the first part of this year those who fabricated copper began to realize that the copper coming in from South America would cost a premium of two cents a pound. Then in May or June the Government started its stockpiling program. At the same time the European Recovery Act went into effect, and we have no way of knowing how much went into the stockpiling or was used for the

Continued on page 71

BETTER OILS



BETTER BUSINESS

Texaco Capella Oils are better oils because careful refining (1) removes impurities that cause gumming and sludging and (2) makes these oils stable, oxidation-resistant, and in every way ideal for compressor lubrication. They have very low pour tests, are moisture-free, and do not react with refrigerants.

You, as a distributor, dealer, or service engineer,

will do better business because *Texaco Capella Oils* give your customers trouble-free compressor performance and more refrigeration per dollar. They save on maintenance costs, and you profit from the new business that results.

You can get *Texaco Capella Oils* in every needed viscosity, in 1-quart, 1-gallon, and 5-gallon

sealed containers. Leading compressor manufacturers approve *Texaco Capella Oils*, and growing lists of satisfied customers prove these superior oils are business-builders.

☆ ☆ ☆

The Texas Company, 135 East 42nd Street, New York 17, N. Y.



TEXACO Capella Oils

FOR ALL AIR CONDITIONING AND REFRIGERATING EQUIPMENT



TUNE IN . . . TEXACO presents MILTON BERLE on television every Tuesday night. METROPOLITAN OPERA radio broadcasts every Saturday afternoon

Circle No. 47 on Reader Service Card for more information

JANUARY, 1951 • COMMERCIAL REFRIGERATION

THE PRACTICAL Refrigeration Applications MANUAL

... by Harold Smith

THE Practical Refrigeration Applications Manual extends a helping hand to those refrigeration and air conditioning men who occasionally encounter field engineering problems too tough for them to handle. Space limitations make it impossible to give complete detailed information covering each step necessary for the installation or erection of refrigeration equipment, insulation or fixtures. It is necessary to assume that those readers who request assistance with their problems are familiar with these basic fundamentals. If they are not, it is suggested that they seek this advice from their sources of supply when purchasing the materials which they intend to use on the job. Most suppliers are equipped to furnish such information. Readers are urged to submit their problems to this department. Each letter of inquiry will be answered personally by the author. The most interesting ones will be published in these columns. All problems should be clearly and completely stated and addressed to: **COMMERCIAL REFRIGERATION, Manual Dept., 1240 Ontario St., Cleveland 13, Ohio.**

PROBLEM

"WE ARE installing a walk-in freezer room, floor measuring 6 x 13 feet. One 6-foot and 13-foot side face outside walls, north and east respectively. The other 6-foot and 13-foot side face inside walls, south and west. The outside walls will be weatherboarded with $\frac{3}{4}$ -inch pine or cypress, sheathed inside with $\frac{3}{4}$ -inch pine, and 6-inch studding will be used.

"The inside walls will be ceiled with $\frac{3}{4}$ -inch pine or cypress and sheathed with $\frac{3}{4}$ -inch pine, with 4-inch studding to be used here. This gives 1½ inches of wood, 6 inches air space and 6 inches corkboard to outside walls. The inside walls will be the same except for 4 inches of air space.

"The floor is 2-inch pine, tongue and grooved with two plies of tar felt laid with tar underneath and on top. Six-inch cork, well tarred, will go on next, topped with 4-inch reinforced concrete.

"The outside summer temperature is 90 F, the inside 80 to 85 F.

"In one end of the freezer we wish to install a plate stand for sharp freezing, -10 F. The rest of the room for storage at zero F. However, in this portion, we wish to use a water defrost blower coil owned by the customer.

"Is it advisable to partition the plate stand from the rest of the room because of air circulation? One of my competitors told my customer that 6 inches of corkboard is insufficient and that the frozen product, fish and other seafoods, could not be stored in a room where a blower coil was used because it would dry out and burn unless it were packaged or glazed. Is this true? If so, how can moisture be vaporized at zero F temperature at normal pressure?

"This may all sound absurd to you, as part of it does to me, but this competitor has been building walk-in coolers and freezer rooms for years in this area. I, as a comparative newcomer, must prove or disprove my beliefs by higher authority."

SOLUTION

IN THE construction of all refrigerated coolers the type, thickness, density and the proper installation of the insulation materials used, is one of the most important factors in the performance and in satisfactory operating results.

Lower temperatures within the cooler, resulting in wider temperature differentials between the inside and outside air, necessitate the use of more insulation than required

when inside temperatures range above freezing as in fresh product cooling.

The use of more than the minimum thickness of insulation is a definite advantage. Its additional cost is returned many times over during the useful life of the cooler. Insulation retards the flow of heat from the outside to the inside of the cooler. Heavy insulation increasingly retards the heat flow. As heat flow is a continuous 24-hour load, day in and day out, a reduction in heat flow enables the usage of smaller refrigeration equipment.

Proper Insulation Cuts Costs

Smaller refrigeration equipment not only costs less but also usually provides lower operating expense in both water for condensing purposes and electric consumption for operation of the compressor. Therefore, you can readily see that by increasing the thickness and quality of the insulation used in constructing the cooler, you may be able to save the increased cost of the additional insulation material.

To cite a simple illustration to prove this point, 10 inches of good insulation will decrease the heat load 40% from the heat load when 6 inches of good insulation is used. Moisture penetration of the insulation rapidly deteriorates the insulation material, while it also greatly reduces its efficiency.

Particularly with low cooler temperatures it is extremely important to moisture-seal both sides of the insulation to prevent vapor penetration. Each manufacturer of insulation materials will make recommendations for the proper methods to insure a safe and effective moisture or vapor seal. Follow such instructions closely as the future success of the installation depends greatly upon the proper sealing of the insulation.

Partition Aids In Freezing

Getting back to your questions, the general construction specifications you give in your letter should provide an installation that can be made to work satisfactorily. We believe, however, that even more satisfactory results would be secured by the use of 8 inches of insulation material and further increased satisfaction would come with the use of 10 inches of insulation.

More insulation results in the use of smaller equipment and lower operating expense, so use your own best judgment based on competitive conditions, construction problems and any other factors entering into this particular situation.

We also would recommend either a partition between the freezer section and storage section or the use of an enclosure around the freezer rack. Either will enable you to better con-

trol the lower freezing temperatures, producing faster and more efficient freezing of the products.

An air fan of a medium velocity also will increase the freezing efficiency by distributing the cold air over all parts of the freezing area. This fan can be manually operated for use only during the actual freezing operation if you prefer to use it that way.

Use Care With Forced Draft

The use of forced draft units in the storage compartment is a common practice and is used in all sections of the country. Some food products, however, are more sensitive to forced air circulation than others. Air rapidly circulated over unwrapped food products tends to absorb the surface moisture on the produce, creating a burn effect.

All products to be frozen should be packaged or wrapped before freezing to prevent this condition. We should recommend a relatively low speed fan operation if the forced draft unit is used, or that louvers or baffles be employed to direct the air circulation to insure protection against excessive dehydrating of products.

**BUY FROM YOUR
REFRIGERATION WHOLESALER**

CONDITIONING AT 60% OFF

Continued from page 37

extensively for industrial and commercial buildings. The heater employed for this installation is an oil-fired model with an output capacity of 1,250,000 Btu per hour.

Basically, the combination heating and air conditioning system functions to establish and maintain desired temperatures in three different zones. Varying temperatures are produced in given areas mainly by changes in the volume of air discharged into those locations.

In the mechanical room in the basement, are the air blending chambers, dust filtering equipment, cooling coils, refrigerating equipment and Dravo heater.

Fresh air from the outside and return air from the store are mixed at one end of the sheet metal chamber. There is an air mixing controller to operate dampers in the fresh air and return air ducts, depending upon the temperature of the air in the blending chamber.

If the outside air is too hot in

summer or too cold in winter, the intake is reduced. A bulb-type thermostat in the chamber controls the dampers to keep the air temperature at 54 degrees in the winter and 82 degrees in the summer by blending fresh and recirculated air.

Blend, Filter, Coal

Some 22,000 cubic feet of air per minute is drawn into the blending chamber. After passing through a bank of filters to screen out dust, lint and dirt, the air flows over the refrigeration coils. There are two banks of 6 rows each of these cooling coils, each bank capable of chilling the air equivalent to the effect of melting 25 tons of ice per day.

The two refrigeration compressors are each powered by a 25-hp motor. Master switches on the control panel change the entire system from summer to winter operation.

Since more air is needed for the summer air conditioning cycle than during the winter season, the 20-hp motor and main blower are connected by belts on vari-pitch sheaves so that the volume of air handled can be increased in the summer and de-

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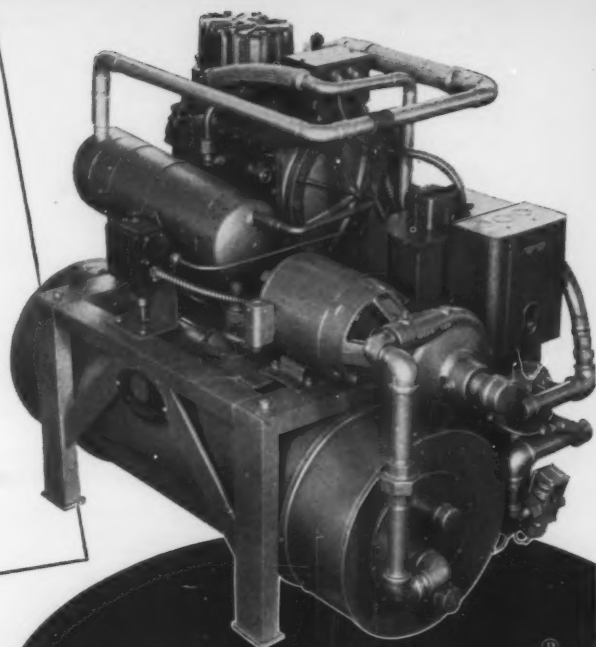
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ACME INDUSTRIES, INC.
JACKSON, MICHIGAN

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and AIR CONDITIONING • JANUARY, 1951

creased in the winter. Tension on the belts is automatically compensated for by the movable base on which the motor is mounted.

For winter heating, the automatic oil burner in the Dravo "Counterflo" heater is operated. The heater, which is 9 feet 8 inches long, has been installed horizontally on the floor at Bramson's due to the low basement ceiling.

Air enters the base of the heater and is forced over banks of flue gas tubes carrying exhaust gases to the vent stack. This pre-warms the air and cools the gases thereby obtaining a high degree of heat transfer. Next, the air sweeps the outer surface of the heater's stainless steel combustion chamber in which oil is being burned.

Corrosion Is Prevented

Use of stainless steel for the combustion chamber of the heater makes this equipment suitable for the combined installation with air conditioning systems. Stainless steel resists corrosion that might result from continuous flow of conditioned air over the combustion chamber during the summer cycle. Moisture condenses on the metal but, due to its stainless quality, no rusting or corrosion occurs.

Conditioned or heated air leaving the top of the heater flows through a plenum chamber into the main supply duct. A by-pass duct has been installed from the base of the heater to join with the outlet at the top of the heater.

Dampers Conserve Fuel

Automatic, motor-operated dampers on the heater outlet and the by-pass duct are controlled by thermostats to blend, during the winter, freshly heated air and air recirculated from the store. This conserves fuel since the Dravo equipment only has to heat enough air to restore the temperature lost as air is circulated throughout the building.

The by-pass duct also serves to handle the additional volume of air required for summer air conditioning.

In the main ductwork that transports air throughout the building during the summer and winter are volume dampers regulating output in various sections. Thermostats, for year-around temperature control are

in strategic locations throughout the store.

Air is discharged into store areas through different types of outlets. In some places, large wall grilles near the ceiling are employed. In other areas, ceiling diffusers of various kinds are used. The outlets are planned so there are no drafts in the store. Air is returned to the blending chamber through large grilles in out-of-the-way locations on the first and second floors.

Individual fitting rooms were given careful attention. Each has its own air discharge outlet to insure proper temperature. In both winter and

CARRIER WINS AWARD



O. W. Bynum, left, vice president in charge of sales of Carrier Corp., receives a bronze trophy on behalf of his company for the best annual report in the air conditioning and refrigeration industry for 1949. Awarding the trophy is Weston Smith, director of the FINANCIAL WORLD annual report surveys.

summer the fitting rooms are kept about five degrees warmer than the sales areas to prevent customers from becoming chilled while trying on garments.

During the winter, the system keeps the sales area at 70 F, the fitting rooms at 75 F, and the stockrooms, alterations department, etc., at 67 F. This is based on an outdoor minimum temperature of -10 F zero.

The summer cycle is designed to keep the entire building, except the fitting rooms, at 78 to 80 F. The fitting rooms, during the summer, are maintained at 82 to 83 F.

A problem common in retail shops is infiltration of air through frequently opened doors. To overcome this, the circular foyer at Bramson's has been equipped with two "wild" ducts that continuously discharge about 2300 cubic feet of cooled or heated air. These ducts have no volume control dampers and are connected to

the plenum chamber at the top of the heater.

The combination of bringing in large volumes of air from the outside and conditioning it according to temperature requirements keeps air pressure in the store positive so unconditioned air is not drawn inside when the doors are opened.

Fur Vaults Cooled, Too

Even the fur vaults at Bramson's are conditioned by the same system. The main storage vault in the basement is supplied continuously with fresh air from the blending chamber through a single by-pass duct. Air in the blending chamber always is below moth propagation temperature. The active fur vault on the first floor receives a large supply of conditioned air continuously. Both vaults have exhaust ventilators.

Aside from the necessity of turning on main switches for summer or winter cycles, the system at Bramson's is fully automatic. A seven-day automatic program clock is set to actuate controls in accordance with store opening and closing hours.

Control Is Automatic

Obviously, precise regulation of temperatures is not required when the store is closed at night and over Sundays. Fuel and power are conserved by decreasing temperatures in the winter and allowing them to increase in the summer during periods of non-occupancy. However, the program clock is set so that desired temperatures automatically are re-established in all areas of the store just before it is reoccupied.

Value of air conditioning in an apparel shop is not limited only to the comfort established for customers and employees. Owners of air conditioned shops save substantial amounts annually through the elimination of merchandise spoilage resulting from handling by perspiring employees and customers. Moreover, use of dust filters with such a system keeps merchandise and furnishings cleaner.

As demonstrated at Bramson's, combination air conditioning and heating systems for year-around temperature control can be installed, operated and maintained economically, and provide positive benefits which make them a sound and profitable investment for modern retail store management.

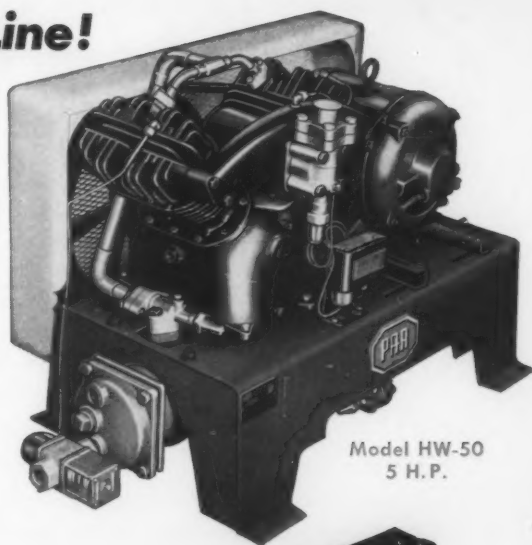
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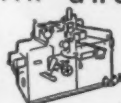
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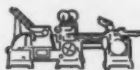
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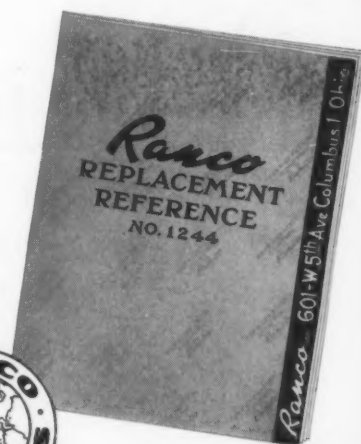
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JANUARY, 1951 • COMMERCIAL REFRIGERATION

HERE'S HOW!

Edited by
Warren F. Farr

Winterization Plan For Air Conditioners

"What am I going to do with my air conditioner in the winter?" Maybe you've heard that question from a number of room cooler customers. Well, as far as you're concerned there can be one sensible and profitable answer—an air conditioner "winterization" plan.

It's sensible because it gives the customer full use of the window during the winter months; because the air conditioner isn't exposed to the elements all year 'round; and because it gives the service man time to service the unit before it is required again next summer.

It's profitable because, by replacing any needed parts and filters, you pick up extra off-season profits; be-

*I do it
this way...*

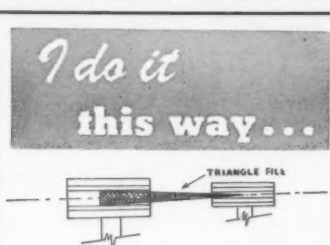
MANY times after having installed a domestic capillary tube I have been called back by the customer with a complaint that the job is noisy. In most such cases I have discovered that the noise is in the capillary tube itself, and that it can be easily eliminated.

To correct this condition I merely solder the coiled portion of the capillary tube together. This ensures completely noiseless operation of the tube.

*A. C. Thomas,
Portsmouth, Ohio*

cause you can keep your men busy during an otherwise slack season; and because it gives you another means of "getting to" customers for extra good will and repeat business as well as leads to new sales among their acquaintances.

Briefly, the "winterization" plan could cover having the unit removed, checked and reconditioned by skilled



IN ALIGNING motor pulleys and compressor flywheels I have found that the usual method of loosening the motor pulley setscrew and moving the compressor flywheel back and forth to get alignment takes too long and sometimes isn't accurate.

When the unit has a U-shaped flywheel, a 12-inch triangle file can be used to get a quick and true alignment.

Insert triangle file into the grooves of flywheel. The bevel of the flywheel and triangle file are almost alike and a snug fitting can be made. Next, hold file in place with finger and rotate flywheel clock-wise. The file will center itself in motor pulley, resulting in a true alignment.

Where the space between the outside of flywheel and motor pulley exceeds 12 inches, a piece of hardwood can be cut triangular and used in the same way.

Angelo E. Dainelo, New York City

service men, then safely stored either in his own location or your own storage space, and finally installed in first-class shape early next summer. Besides giving you off-season work, the plan will cut down lots of extra service calls during hot weather.

If you have sufficient space for storage in your own place of business, make plans to use it. Otherwise you can locate suitable neighborhood space for your needs. But be sure whatever space you do use is adequately covered by insurance. The loss or destruction of a unit in your care can cause plenty of trouble—so don't take chances.

Helpful Hints on Leak Detection

The halide torch or lamp, which is used so universally by service engineers, does not have the blessing of the manufacturers of methyl chloride, or of the manufacturer of the halide torch itself. This is apparently due to the fact that it is possible to ignite a proper mixture of methyl chloride and air by means of the halide lamp.

Explosions due to ignition of methyl chloride by a halide lamp have not, to the knowledge of the writer, occurred. Adequate ventilation must be present before tests are made with the halide torch to eliminate danger of an explosion and to prevent possible harmful effects to products formed when the methyl

*I do it
this way...*

OCCASIONALLY a leak occurs in a system in a pipe thread that was put together with one of the numerous pipe joint compounds. Apparently the compound dries and decomposes in time, permitting the leak.

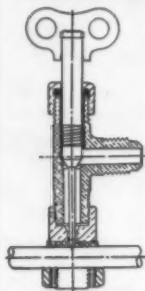
By taking out the fitting, cleaning and tinning it with soft solder in the threads, then putting it back on, I have not yet had to go back on a job where such a fitting was leaking.

*Arvo O. Ahokas,
Westminster, Mass.*

chloride passes through the flame of the halide lamp.

It should always be borne in mind that the halide lamp can set off a mixture of methyl chloride in air, provided such a mixture is present. Therefore, ventilate the area before using a halide torch. Ventilation of the area also is extremely important due to the fact that after the leak is located, the service engineer may be

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A tool every service man should carry

A permanent gauge port on hermetically sealed units

To correctly diagnose trouble in refrigeration systems, head and back pressures should be known

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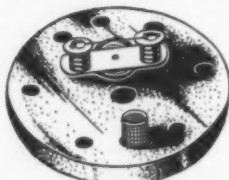
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required to work in this area for some time.

The best compliment that has ever been paid to methyl chloride is the fact that despite some of the very rough usage it has received and despite the conditions under which it has been called upon to operate, there have been relatively few accidents associated with it. It can be dangerous, but from a practical standpoint it has not been proved to be a dangerous material when properly used.

—By B. F. Kmak in "The Skilled Tradesman," publication of Commercial Trades Institute, Chicago.

Repeats Are the Pay-Off In Service Contracts

We've been asked a number of times recently, "What's the best way to get customers to sign up for second year service contracts?" Outlined below is a procedure used successfully by a number of organizations—but you can take our word for it that it isn't, by any means, the only procedure—and you can also take our word for it that the procedure, in itself, isn't the only necessary ingredient.

The most important factor in obtaining second and third year service contracts is your own servicing poli-

in the mail several days before termination, and a third letter is ready if the customer doesn't renew. This goes out after termination.

Your service men can help, too, if during their regular inspection calls they talk to the owner about his equipment and build up the money-saving advantage of the service contract arrangement to the merchant.

Water Cooler Stream Height Can Be Regulated

If your customer complains that the stream height of his bubbler type water cooler is not uniform, the first thing to check is the bubbler itself. This is just a simple matter of adjustment.

If, however, this doesn't do the trick, then check for a defective diaphragm in the pressure regulator. If this is found to be defective, it should be replaced immediately.

*I do it
this way...*



WHEN you want to tighten the gland on a liquid indicator and have no Hex-type spanner available, a quick way to accomplish this is to use a Hex nut with a box wrench.
M. L. Bruce, Haverhill, Mass.

*I do it
this way...*

FOR "portable power," a double-outlet tap attached to the end of your extension-lamp cord is handy. You can use it to connect your electric drill or soldering iron when you work in out-of-the-way places, and have a good light at the same time. Lacking such a tap, attach an ordinary outlet to the cord, about a foot from the lamp socket.

I. Cutler, Jersey City, N. J.

cies—the ones that you follow every day in the year. Keeping the customer satisfied with the performance of his equipment will do more than anything else to keep him convinced of the value in service contract insurance.

Most service companies use a series of three letters that go out at intervals to the customer whose contract is running out. The first letter is timed several weeks before termination. The second, a "warning," goes

Do You Know That . . .

. . . where points on controls of commercial systems constantly fuse together due to a slight low voltage condition you can replace with a mercury switch to overcome this condition?

. . . flare nuts can be easily frost-proofed by cutting two lengthwise slots on the collar of the nut almost down to the flare seat, or cutting off part of the collar with a hacksaw?

. . . it is an easy matter to make a cold bath for shop testing of thermal valves and controls? It is a simple apparatus made from an old condensing unit and odds and ends. Remember to include an air agitator from your air system with a piece of capillary tubing to meter the air.

OPPORTUNITIES

(Classified Advertising)

Rates: for "Positions Wanted," \$4.00 minimum, limit 25 words. For all other classifications, \$4.50 minimum for 25 words or under, each additional word 15c; boldface type or all capitals, \$7.50 minimum for 25 words or under, each additional word 20c. Box addresses count as five words, other addresses by actual word count. All advertisements in this section are payable in advance.

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Complete rebuilding service to original factory standards on all hermetic units and compressors. Complete units \$45.00. Compressors \$24.00. Exchanges same price F.O.B. plant. All rebuilding guaranteed against defective material and workmanship. Prompt service. Hermetic Service Co., 510 E. Willamette, Colorado Springs, Colo.

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Top-flight commercial-refrigerator manufacturer interested in established West Coast manufacturers' representative calling on commercial-refrigerator dealers. Equipment can be shipped directly from factory to dealer. Excellent opportunity. Box 1151.

SALVAT TO REPRESENT USAIRCO IN COLOMBIA

Jose Salvat & Co., Ltda., of Barranquilla, Colombia, have been appointed by the United States Air Conditioning Corp., Minneapolis, as its exclusive representatives and distributors in that area.

REMA-REWA PANEL . . .

Continued from page 61

European Recovery Act. Producers of copper tubing are now unable to fill the demand. The situation will not get much better for some time. "DO" orders are now taking 25% of plant production.

Question: Isn't it the thought that the curtailment production in the automobile industry and the building industry, which will reach about 25%, will release enough copper to take care of the situation?

Answer: With "DO" orders increasing, it is expected one will offset the other.

Question: Can condensing unit manufacturers do anything to offset the excise tax?

Answer: The Revenue Act of 1950 is very vague. This section relates to domestic uses, and particularly domestic freezers, and freezers are not defined. The Highside Equipment Section of REMA is working closely with officials in the Bureau of Internal Revenue on this subject.

GULLATT ADDS MADDEN

Madden Brass Products Co., Chicago, Ill., has announced appointment of Gullatt Co. as its southeastern

representative to serve the states of North and South Carolina, Georgia, Florida, Alabama and Eastern half of Tennessee.

Henry W. Gullatt is president of the company and Ralph M. Berry is sales engineer.

Offices and warehouse of the company are located at 66 Mangum St., N. W. Atlanta, Ga.



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JANUARY 15-31

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Precision Humidity and Temperature Indicator

Hand-operated and calibrated to professional standards of accuracy by the maker of the world's finest weather instruments. Handsome, modern case—4" high, 5 1/2" wide, 1 1/2" deep.



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Portable Humidity and Temperature Recorder

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Export Sales: Bendix International Division
72 Fifth Avenue, New York 11, N. Y.

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Circle No. 56 on Reader Service Card

Servicemen!

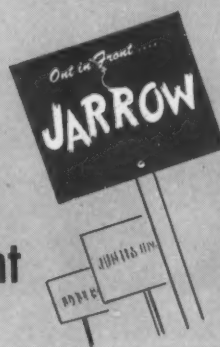
**FOR MAXIMUM
EFFICIENCY
USE**

**CHICAGO SEALS AND
VALVE PLATES**



**CHICAGO
SEAL CO.**
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out
in
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REFRIGERATOR

DOOR GASKETS

AND ACCESSORIES



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JANUARY, 1951 • COMMERCIAL REFRIGERATION

ONLY THE SPORLAN CATCH-ALL FILTER-DRIER

offers you

both

SPORLAN



**GREATEST FILTERING
AREA
HIGHEST DEGREE OF
ACTIVATION**

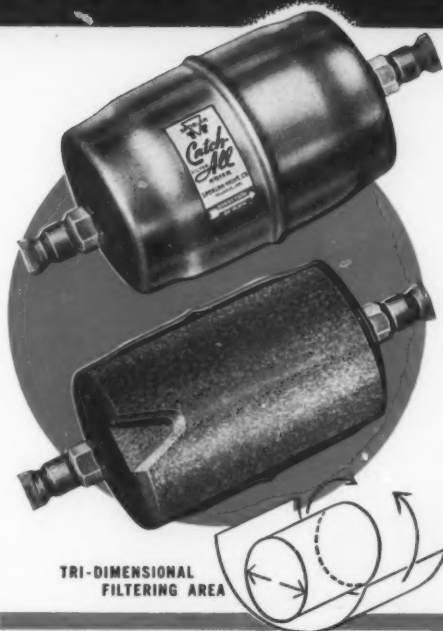
Size for size, the Sporlan Catch-All with its scientifically molded porous cylinder offers the greatest filtering area because its end surface is augmented by its complete cylindrical surface into a tri-dimensional filtering area, filtering out any foreign matter as minute as 9 microns with negligible pressure drop!

Sporlan Catch-Alls are activated to the highest degree of dryness after they are completely assembled by subjecting them to a temperature of over 500° F. for a minimum of four hours! The Sporlan Catch-Alls are then sealed with moisture proof seals to prevent any loss of activation before installation.

When you want perfectly clean,
perfectly dry refrigeration systems . . . install

SPORLAN *Catch-Alls*
the perfect filter-driers and GET PEAK
PERFORMANCE ON ALL INSTALLATIONS

Catch-Alls are available in all sizes at
all Sporlan wholesalers



**AND HERE ARE 5 ADDITIONAL
EXCLUSIVE CATCH-ALL FEATURES**

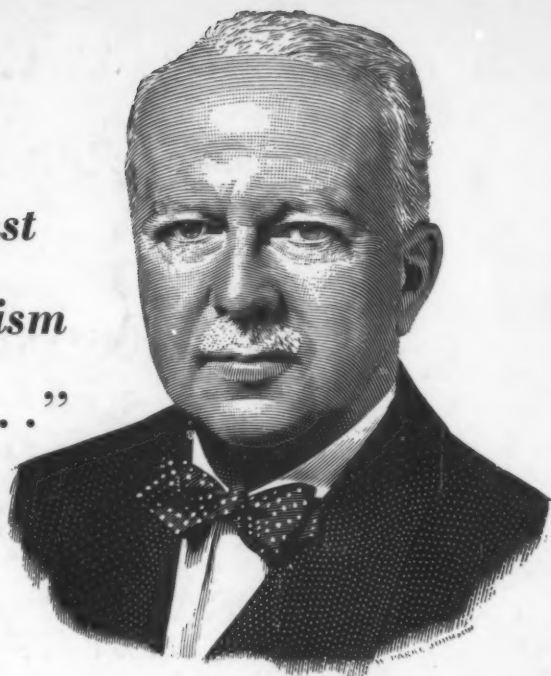
1. They cannot powder!
2. They cannot pack!
3. The refrigerant cannot channel around the desiccant!
4. The unique, porous Catch-All cylinders are molded of minute particles of a highly efficient desiccant, the efficiency of which is greater than that of the same desiccant in granular form.
5. They dry down to a low end point...a point so low that any remaining moisture is absolutely harmless!

SPORLAN
VALVE COMPANY

7525 SUSSEX AVENUE • • • ST. LOUIS 17, MISSOURI

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*"The immunizer against
the disease of communism
is a certain feeling . . ."*



MR. WALTER S. GIFFORD

"It is the feeling of a man who owns a home, a bank account, an insurance policy. It is the feeling that an employee on the Payroll Savings Plan has when he gazes at his accumulation of Savings Bonds and realizes that here is palpable evidence that he has made a profit on his job—that the profit system works for him as well as for his employer."

Mr. Gifford has believed in—and worked for—payroll savings plans for thirty-seven years—since 1913, when, as Statistician of the A. T. & T., Mr. Gifford developed a payroll savings plan for the purchase of A. T. & T. stock.

In 1938, A. T. & T. employees were offered a Payroll Savings Plan for the purchase of U. S. Savings Bonds. To date, Bell System employees have invested **more than half a billion** dollars in savings bonds—with a maturity value in excess of \$675,000,000.

In upwards of 21,000 large companies, more than 8 million Americans are investing \$150,000,000 in U. S. Savings Bonds **every month**. To the systematic saving of these men and women—and the whole-hearted co-operation of executives like Mr. Gifford—is due in no small

measure the important feeling of ownership shared by the Americans who own 56 billion dollars in U. S. Savings Bonds (against 45 billions at the end of the war!).

Every Payroll Savings Plan is a reflection of the vision and enthusiasm of the top executive of the company. If he gets behind it, **personally**, employee participation is high—to the benefit of the country, the company and the employee. If the interest of the Big Boss is active—participation may very well exceed the 50% mark. The top man is the key man in a Payroll Savings Plan.

Get in touch with your State Director, Savings Bond Division, U. S. Treasury Department. He will help you put in a plan . . . or he will show you how to increase employee participation—without undue effort or high pressure tactics.

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